

For the reasons set out in the preamble, parts 9 and 63 of title 40, chapter I, of the Code of Federal Regulations is amended as follows:

PART 9--[AMENDED]

1. The authority citation for part 9 continues to read as follows:

Authority: 7 U.S.C. 135 et seq., 136-136y; 15 U.S.C. 2001, 2003, 2005, 2006, 2601-2671; 21 U.S.C. 331j, 346a, 348; 31 U.S.C. 9701; 33 U.S.C. 1251 et seq., 1311, 1313d, 1314, 1318, 1321, 1326, 1330, 1342, 1344, 1345 (d) and (e), 1361; E.O. 11735, 38 FR 21243, 3 CFR, 1971-1975 Comp. p. 973; 42 U.S.C. 241, 242b, 243, 246, 300f, 300g, 300g-1, 300g-2, 300g-3, 300g-4, 300g-5, 300g-6, 300j-1, 300j-2, 300j-3, 300j-4, 300j-9 1857 et seq., 6901-6992k, 7401-7671g, 7542, 9601-9657, 11023, 11048.

2. Section 9.1 is amended by adding in numerical order a new entry to the table under the indicated heading to read as follows:

§ 9.1 OMB approvals under the Paperwork Reduction Act.

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40 CFR Citation

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OMB Control No.

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National Emission Standards for Hazardous Air Pollutants for Source Categories.<sup>3</sup>

63.1259-63.1260

2060-0314

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<sup>3</sup>The ICR's referenced in this section of the table encompass the applicable general provisions contained in the 40 CFR part 63, subpart A, which are not independent information collection requirements.

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## PART 63--[AMENDED]

3. The authority citation for part 63 continues to read as follows:

Authority: 42 U.S.C. 7401, et. seq.

4. Section 63.14 is amended by revising paragraphs (b)(3) and (c)(1) to read as follows:

§ 63.14 Incorporation By Reference

\* \* \* \* \*

(b) \* \* \*

(3) ASTM D2879-96, Standard Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope, IBR approved for §§ 63.111 of subpart G and 63.1251 of subpart GGG of this part.

(c) \* \* \*

(1) API Manual of Petroleum Measurement Specifications (MPMS) Chapter 19.2, Evaporative Loss From Floating-Roof Tanks (formerly API Publications 2517 and 2519), First Edition, April 1997, IBR approved for §§ 63.111 of subpart G and 63.1251 of subpart GGG of this part.

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5. Part 63 is amended by adding a new subpart GGG consisting of §§ 63.1250 through 63.1261 to read as follows: Subpart GGG-National Emission Standards for Pharmaceuticals Production

Sec.

63.1250 Applicability.

63.1251 Definitions.

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63.1253 Standards: Storage tanks.

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63.1250 Applicability.

(a) Definition of affected source. The affected source subject to this subpart is the pharmaceutical manufacturing operation, as defined in § 63.1251. Except as specified in paragraph (d) of this section, the provisions of this subpart apply to pharmaceutical manufacturing operations that meet the criteria specified in paragraphs (a)(1) through (3) of this section as follows:

(1) Manufacture a pharmaceutical product, as defined in § 63.1251;

(2) Are located at a plant site that is a major source as defined in section 112(a) of the Act; and

(3) Process, use, or produce HAP.

(b) New source applicability. A new affected source subject to this subpart and to which the requirements for new sources apply is: an affected source for which construction or reconstruction commenced after April 2, 1997 and the standard was applicable at the time of construction or reconstruction; or a pharmaceutical manufacturing process unit (PMPU), dedicated to manufacturing a single product,

that has the potential to emit 10 tons per year of any one HAP or 25 tons per year of combined HAP, for which construction commenced after April 2, 1997.

(c) General Provisions. Table 1 of this subpart specifies the provisions of subpart A of this part that apply to an owner or operator of an affected source subject to this subpart, and clarifies specific provisions in subpart A of this part as necessary for this subpart.

(d) Processes exempted from the affected source. The provisions of this subpart do not apply to research and development facilities.

(e) Storage tank ownership determination. The owner or operator shall follow the procedures specified in paragraphs (e)(1) through (5) of this section to determine to which PMPU a storage tank shall belong.

(1) If a storage tank is dedicated to a single PMPU, the storage tank shall belong to that PMPU.

(2) If a storage tank is shared among PMPU's, then the storage tank shall belong to that PMPU located on the same plant site as the storage tank that has the greatest annual volume input into or output from the storage tank (i.e., said PMPU has the predominant use of the storage tank).

(3) If predominant use cannot be determined for a storage tank that is shared among PMPU's and if one of those

PMPU's is subject to this subpart, the storage tank shall belong to said PMPU.

(4) If the predominant use of a storage tank varies from year to year, then predominant use shall be determined based on the utilization that occurred during the year preceding [INSERT DATE OF PUBLICATION OF THIS FINAL RULE IN THE FEDERAL REGISTER] for existing affected sources. For new affected sources, predominant use will be based on the first year after initial startup. The determination of predominant use shall be reported in the Notification of Compliance Status required by § 63.1260(f). If the predominant use changes, the redetermination of predominant use shall be reported in the next Periodic Report.

(5) If the storage tank begins receiving material from (or sending material to) another PMPU; or ceases to receive material from (or send material to) a PMPU; or if the applicability of this subpart to a storage tank has been determined according to the provisions of paragraphs (e)(1) through (4) of this section and there is a significant change in the use of the storage tank that could reasonably change the predominant use, the owner or operator shall reevaluate the applicability of this subpart to the storage tank, and report such changes to EPA in the next Periodic report.

(f) Compliance dates. The compliance dates for affected sources are as follows:

(1) An owner or operator of an existing affected source must comply with the provisions of this subpart within 3 years after [INSERT DATE OF PUBLICATION OF THIS FINAL RULE IN THE FEDERAL REGISTER].

(2) An owner or operator of a new or reconstructed affected source must comply with the provisions of this subpart on [insert date of publication of this final rule in the federal register] or upon startup, whichever is later.

(3) Notwithstanding the requirements of paragraphs (f)(1) and (2) of this section, a new source which commences construction or reconstruction after April 2, 1997 and before [INSERT DATE OF PUBLICATION OF THIS FINAL RULE IN THE FEDERAL REGISTER] shall not be required to comply with such promulgated standard until 3 years after [INSERT DATE OF PUBLICATION OF THIS FINAL RULE IN THE FEDERAL REGISTER] if:

(i) The promulgated standard is more stringent than the proposed standard; and

(ii) The owner or operator complies with the standard as proposed during the 3-year period immediately after [INSERT DATE OF PUBLICATION OF THIS FINAL RULE IN THE FEDERAL REGISTER].

(4) Pursuant to section 112(i)(3)(B) of the Act, an owner or operator may request an extension allowing the existing source up to 1 additional year to comply with section 112(d) standards.

(i) For purposes of this subpart, a request for an extension shall be submitted no later than 120 days prior to the compliance dates specified in paragraphs (f)(1) through (3) of this section, except as provided in paragraph (f)(4)(ii) of this section. The dates specified in § 63.6(i) for submittal of requests for extensions shall not apply to sources subject to this subpart.

(ii) An owner or operator may submit a compliance extension request after the date specified in paragraph (f)(4)(i) of this section provided the need for the compliance extension arose after that date and before the otherwise applicable compliance date, and the need arose due to circumstances beyond reasonable control of the owner or operator. This request shall include the data described in § 63.6(i)(6)(i)(A), (B), (C), and (D).

(g) Applicability of this subpart except during periods of startup, shutdown, and malfunction.

(1) Each provision set forth in this subpart shall apply at all times except that emission limitations shall not apply during periods of: startup; shutdown; and malfunction, if the startup, shutdown, and malfunction



precludes the ability of a particular emission point of an affected source to comply with one or more specific emission limitations to which it is subject and the owner or operator follows the provisions for periods of startup, shutdown, and malfunction, as specified in §§ 63.1259(a)(3) and 63.1260(i). Startup, shutdown, and malfunction are defined in § 63.1251.

(2) The provisions set forth in appendix A of this subpart shall apply at all times except during periods of nonoperation of the PMPU (or specific portion thereof) in which the lines are drained and depressurized resulting in the cessation of the emissions to which appendix A of this subpart applies.

(3) The owner or operator shall not shut down items of equipment that are required or utilized for compliance with the emissions limitations of this subpart during times when emissions (or, where applicable, wastewater streams or residuals) are being routed to such items of equipment, if the shutdown would contravene emissions limitations of this subpart applicable to such items of equipment. This paragraph does not apply if the item of equipment is malfunctioning, or if the owner or operator must shut down the equipment to avoid damage due to a malfunction of the PMPU or portion thereof.

(4) During startups, shutdowns, and malfunctions when the emissions limitations of this subpart do not apply pursuant to paragraphs (g)(1) through (3) of this section, the owner or operator shall implement, to the extent reasonably available, measures to prevent or minimize excess emissions to the extent practical. For purposes of this paragraph, "excess emissions" means emissions in excess of those that would have occurred if there were no startup, shutdown, or malfunction and the owner or operator complied with the relevant provisions of this subpart. The measures to be taken shall be identified in the applicable startup, shutdown, and malfunction plan, and may include, but are not limited to, air pollution control technologies, work practices, pollution prevention, monitoring, and/or changes in the manner of operation of the source. Back-up control devices are not required, but may be used if available.

(h) Consistency with other regulations.

(1) Consistency with other MACT standards. After the compliance dates specified in this section, an affected source subject to the provisions of this subpart that is also subject to the provisions of any other subpart of 40 CFR part 63 may elect, to the extent the subparts are consistent, which subpart under which to maintain records and report to EPA. The affected source shall identify in the Notification of Compliance Status report required by

§ 63.1260(f) under which authority such records will be maintained.

(2) Consistency with RCRA subparts AA, BB, and/or CC.

After the compliance dates specified in this section, if any affected source subject to this subpart is also subject to monitoring, recordkeeping, and reporting requirements in 40 CFR part 264, subpart AA, BB, or CC, or is subject to monitoring and recordkeeping requirements in 40 CFR part 265, subpart AA, BB, or CC and the owner or operator complies with the periodic reporting requirements under 40 CFR part 264, subpart AA, BB, or CC that would apply to the device if the facility had final-permitted status, the owner or operator may elect to comply either with the monitoring, recordkeeping, and reporting requirements of this subpart, or with the monitoring, recordkeeping, and reporting requirements in 40 CFR parts 264 and/or 265, as described in this paragraph, which shall constitute compliance with the monitoring, recordkeeping, and reporting requirements of this subpart. If the owner or operator elects to comply with the monitoring, recordkeeping, and reporting requirements in 40 CFR parts 264 and/or 265, the owner or operator shall report all information required by § 63.1260(g). The owner or operator shall identify in the Notification of Compliance Status required by § 63.1260(f)

the monitoring, recordkeeping, and reporting authority under which the owner or operator will comply.

(3) Consistency with NSPS subpart Kb. After the compliance dates specified in this section, a storage tank controlled with a floating roof and in compliance with the provisions of 40 CFR 60.112(b), subpart Kb constitutes compliance with the provisions of this subpart GGG. A storage tank with a fixed roof, closed vent system, and control device in compliance with the provisions of 40 CFR 60.112(b), subpart Kb must comply with the monitoring, recordkeeping, and reporting provisions of this subpart GGG. The owner or operator shall identify in the Notification of Compliance Status report required by § 63.1260(f) which tanks are in compliance with subpart Kb.

(4) Consistency with subpart I. After the compliance dates specified in this section, for equipment at an affected source subject to this subpart that is also subject to subpart I of this part, an owner or operator may elect to comply with either the provisions of this subpart GGG or the provisions of subpart I of this part. The owner or operator shall identify in the Notification of Compliance Status report required by § 63.1260(f) the provisions with which the owner elects to comply.

(5) Consistency with other regulations for wastewater. After the compliance dates specified in this section, the

owner or operator of an affected wastewater that is also subject to provisions in 40 CFR parts 260 through 272 shall comply with the more stringent control requirements (e.g., waste management units, numerical treatment standards, etc.) and the more stringent testing, monitoring, recording, and recordkeeping requirements that overlap between the provisions of this subpart and the provisions of 40 CFR parts 260 through 272. The owner or operator shall keep a record of the information used to determine which requirements were the most stringent and shall submit this information if requested by the Administrator.

(i) For the purposes of establishing whether a person is in violation of this subpart, nothing in this subpart shall preclude the use of any credible evidence or information relevant to whether a source would have been in compliance with applicable requirements.

§ 63.1251 Definitions.

Terms used in this subpart are defined in the Act, in subpart A of this part, or in this section. If the same term is defined in subpart A of this part and in this section, it shall have the meaning given in this section for the purposes of this subpart.

Active ingredient means any component that is intended to furnish pharmacological activity or other direct effect in the diagnosis, cure, mitigation, treatment, or prevention

of disease, or to affect the structure or any function of the body of man or other animals. The term includes those components that may undergo chemical change in the manufacture of the pharmaceutical product and be present in the pharmaceutical product in a modified form intended to furnish the specified activity or effect.

Actual HAP emissions means the HAP emitted to the atmosphere from either uncontrolled or controlled emission points.

Air pollution control device or Control device means equipment installed on a process vent, storage tank, wastewater treatment exhaust stack, or combination thereof that reduces the mass of HAP emitted to the air. The equipment may consist of an individual device or a series of devices. Examples include, but are not limited to, incinerators, carbon adsorption units, condensers, flares, boilers, process heaters, and gas absorbers. Process condensers are not considered air pollution control devices or control devices.

Automated monitoring and recording system means any means of measuring values of monitored parameters and creating a hard copy or computer record of the measured values that does not require manual reading of monitoring instruments and manual transcription of data values.

Automated monitoring and recording systems include, but are not limited to, computerized systems and strip charts.

Annual average concentration, as used in the wastewater provisions, means the annual average concentration as determined according to the procedures specified in § 63.1257(e)(1)(i).

Batch emission episode means a discrete venting episode that may be associated with a single unit operation. A unit operation may have more than one batch emission episode. For example, a displacement of vapor resulting from the charging of a vessel with HAP will result in a discrete emission episode that will last through the duration of the charge and will have an average flowrate equal to the rate of the charge. If the vessel is then heated, there will also be another discrete emission episode resulting from the expulsion of expanded vapor. Both emission episodes may occur in the same vessel or unit operation. There are possibly other emission episodes that may occur from the vessel or other process equipment, depending on process operations.

Batch operation or Batch process means a noncontinuous operation involving intermittent or discontinuous feed into equipment, and, in general, involves the emptying of the equipment after the batch operation ceases and prior to beginning a new operation. Addition of raw material and

withdrawal of product do not occur simultaneously in a batch operation.

Block means a time period that comprises a single batch.

Cleaning operation means routine rinsing, washing, or boil-off of equipment in batch operations between batches.

Closed biological treatment process means a tank or surface impoundment where biological treatment occurs and air emissions from the treatment process are routed to either a control device by means of a closed-vent system or by means of hard-piping. The tank or surface impoundment has a fixed roof, as defined in this section, or a floating flexible membrane cover that meets the requirements specified in § 63.1256(c).

Closed-vent system means a system that is not open to the atmosphere and is composed of piping, ductwork, connections, and, if necessary, flow inducing devices that transport gas or vapor from an emission point to a control device.

Combustion device means an individual unit of equipment, such as a flare, incinerator, process heater, or boiler, used for the combustion of HAP vapors.

Component means any ingredient for use in the manufacture of a drug product, including those that may not appear in such drug product.



Construction means the onsite fabrication, erection, or installation of an affected source or a PMPU.

Consumption means the quantity of HAP entering a process that is not used as reactant (makeup). If the same HAP component is generated in the process as well as added as makeup, consumption shall include the quantity generated in the process, as calculated assuming 100 theoretical conversion. The quantity of material used as reactant is the theoretical amount needed assuming a 100 percent stoichiometric conversion. Makeup is the net amount of material that must be added to the process to replenish losses.

Container, as used in the wastewater provisions, means any portable waste management unit that has a capacity greater than or equal to 0.1 m<sup>3</sup> in which a material is stored, transported, treated, or otherwise handled. Examples of containers are drums, barrels, tank trucks, barges, dumpsters, tank cars, dump trucks, and ships.

Continuous process means a process where the inputs and outputs flow continuously throughout the duration of the process. Continuous processes are typically steady state.

Continuous recorder means a data recording device that either records an instantaneous data value at least once every 15 minutes or records 15-minute or more frequent block average values.

Continuous seal means a seal that forms a continuous closure that completely covers the space between the wall of the storage tank and the edge of the floating roof. A continuous seal may be a vapor-mounted, liquid-mounted, or metallic shoe seal.

Controlled HAP emissions means the quantity of HAP discharged to the atmosphere from an air pollution control device.

Cover, as used in the wastewater provisions, means a device or system which is placed on or over a waste management unit containing wastewater or residuals so that the entire surface area is enclosed to minimize air emissions. A cover may have openings necessary for operation, inspection, and maintenance of the waste management unit such as access hatches, sampling ports, and gauge wells provided that each opening is closed when not in use. Examples of covers include a fixed roof installed on a wastewater tank, a lid installed on a container, and an air-supported enclosure installed over a waste management unit.

Dedicated PMPU means a PMPU that is composed of equipment that is used to manufacture the same product for a continuous period of 6 months or greater. The PMPU includes any shared storage tank(s) that are determined to belong to the PMPU according to the procedures in § 63.1250(e).

Enhanced biological treatment system or enhanced biological treatment process means an aerated, thoroughly mixed treatment unit(s) that contains biomass suspended in water followed by a clarifier that removes biomass from the treated water and recycles recovered biomass to the aeration unit. The mixed liquor volatile suspended solids (biomass) is greater than 1 kilogram per cubic meter throughout each aeration unit. The biomass is suspended and aerated in the water of the aeration unit(s) by either submerged air flow or mechanical agitation. A thoroughly mixed treatment unit is a unit that is designed and operated to approach or achieve uniform biomass distribution and organic compound concentration throughout the aeration unit by quickly dispersing the recycled biomass and the wastewater entering the unit.

Excipient means any substance other than the active drug or product which have been appropriately evaluated for safety and are included in a drug delivery system to either aid the processing of the drug delivery system during its manufacture; protect, support or enhance stability, bioavailability, or patient acceptability; assist in product identification; or enhance any other attribute of the overall safety and effectiveness of the drug delivery system during storage or use.

External floating roof means a pontoon-type or double-deck type cover that rests on the liquid surface in a storage tank or waste management unit with no fixed roof.

Fill or filling means the introduction of material into a storage tank or the introduction of a wastewater stream or residual into a waste management unit, but not necessarily to complete capacity.

Fixed roof means a cover that is mounted on a waste management unit or storage tank in a stationary manner and that does not move with fluctuations in liquid level.

Floating roof means a cover consisting of a double deck, pontoon single deck, internal floating cover or covered floating roof, which rests upon and is supported by the liquid being contained, and is equipped with a closure seal or seals to close the space between the roof edge and waste management unit or storage tank wall.

Flow indicator means a device which indicates whether gas flow is, or whether the valve position would allow gas flow to be, present in a line.

Formulation means the process of mixing, blending, or diluting one or more active or inert ingredients with one or more active or inert ingredients, without an intended chemical reaction, to obtain a pharmaceutical dosage form. Formulation operations include mixing, compounding, blending, and tablet coating.

Halogenated compounds means organic HAP compounds that contain halogen atoms.

Halogen atoms mean atoms of chlorine or fluorine.

Halogenated vent stream or Halogenated stream means a process, storage tank, or waste management unit vent determined to have a concentration of halogenated compounds of greater than 20 ppmv, as determined through process knowledge, test results using Method 18 of 40 CFR part 60, appendix A, or test results using any other test method that has been validated according to the procedures in Method 301 of appendix A of this part.

Hard-piping means piping or tubing that is manufactured and properly installed using good engineering judgment and standards, such as ANSI B31-3.

Hydrogen halides and halogens means hydrogen chloride (HCl), chlorine (Cl<sub>2</sub>), and hydrogen fluoride (HF).

Individual drain system means the stationary system used to convey wastewater streams or residuals to a waste management unit. The term includes hard piping; all process drains and junction boxes; and associated sewer lines, other junction boxes, manholes, sumps, and lift stations conveying wastewater streams or residuals. A segregated stormwater sewer system, which is a drain and collection system designed and operated for the sole purpose of collecting rainfall-runoff at a facility, and which is segregated from

all other individual drain systems, is excluded from this definition.

Internal floating roof means a cover that rests or floats on the liquid surface (but not necessarily in complete contact with it) inside a storage tank or waste management unit that has a permanently affixed roof.

Junction box means a manhole or access point to a wastewater sewer system line or a lift station.

Large control device means a control device that controls process vents with total emissions of greater than or equal to 10 tons of HAP per year, before control.

Liquid-mounted seal means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the storage tank or waste management unit and the floating roof. The seal is mounted continuously around the tank or unit.

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, emissions monitoring equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused all or in part by poor maintenance or careless operation are not malfunctions.

Maximum true vapor pressure means the equilibrium partial pressure exerted by the total organic HAP in the stored or transferred liquid at the temperature equal to the highest calendar-month average of the liquid storage or

transferred temperature for liquids stored or transferred above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for liquids stored or transferred at the ambient temperature, as determined:

(1) In accordance with methods described in Chapter 19.2 of the American Petroleum Institute's Manual of Petroleum Measurement Standards, Evaporative Loss From Floating-Roof Tanks (incorporated by reference as specified in § 63.14); or

(2) As obtained from standard reference texts; or

(3) As determined by the American Society for Testing and Materials Method D2879-97, Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope (incorporated by reference as specified in § 63.14); or

(4) Any other method approved by the Administrator.

Metallic shoe seal or mechanical shoe seal means metal sheets that are held vertically against the wall of the storage tank by springs, weighted levers, or other mechanisms and connected to the floating roof by braces or other means. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

Nondedicated formulation operations means equipment used to formulate numerous products.

Nondedicated recovery device(s) means a recovery device that receives material from more than one PMPU.

Open biological treatment process means a biological treatment process that is not a closed biological treatment process as defined in this section.

Operating scenario for the purposes of reporting and recordkeeping, means any specific operation of a PMPU and includes for each process: (1) a description of the process and the type of process equipment used, (2) an identification of related process vents and their associated emissions episodes and durations, wastewater PODs, and storage tanks; (3) the applicable control requirements of this subpart, including the level of required control; (4) the control or treatment devices used, as applicable, including a description of operating and/or testing conditions for any associated control device; (5) the process vents, wastewater PODs, and storage tanks (including those from other processes) that are simultaneously routed to the control or treatment device(s); (6) the applicable monitoring requirements of this subpart and any parametric level that assures compliance for all emissions routed to the control or treatment device; (7) calculations and engineering analyses required to demonstrate compliance; and (8) a verification that the operating conditions for any associated control or treatment device have not been



exceeded and that any required calculations and engineering analyses have been performed. For reporting purposes, a change to any of these elements not previously reported, except for element (5) above, shall constitute a new operating scenario.

Partially soluble HAP means a HAP listed in Table 2 of this subpart.

Pharmaceutical manufacturing process unit (PMPU) means the process, as defined in this subpart, and any associated storage tanks, equipment identified in § 63.1252(f), and components such as pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, and instrumentation systems that are used in the manufacturing of a pharmaceutical product.

Pharmaceutical manufacturing operations means the facility-wide collection of PMPU's and any other equipment such as heat exchanger systems, or cooling towers that are not associated with an individual PMPU, but that are located at a facility for the purpose of manufacturing pharmaceutical products and are under common control.

Pharmaceutical product means:

(1) Any material described by the standard industrial classification (SIC) code 2833 or 2834;

(2) Any material whose manufacturing process is described by north american industrial classification system (NAICS) code 325411 or 325412;

(3) A finished dosage form of a drug, for example, a tablet, capsule, solution, etc., that contains an active ingredient generally, but not necessarily, in association with inactive ingredients; or

(4) Any component whose intended primary use is to furnish pharmacological activity or other direct effect in the diagnosis, cure, mitigation, treatment, or prevention of disease, or to affect the structure or any function of the body of man or other animals (the term does not include excipients, but includes drug components such as raw starting materials or precursors that undergo chemical change or processing before they become active ingredients).

Point of determination (POD) means the point where a wastewater stream exits the process, storage tank, or last recovery device. If soluble and/or partially soluble HAP compounds are not recovered from water before discharge, the discharge point from the process equipment or storage tank is a POD. If water streams are routed to a recovery device, the discharge from the recovery device is a POD. There can be more than 1 POD per process or PMPU.

Primary use means the single largest use of a material.

Process means all equipment which collectively function to produce a pharmaceutical product. A process may consist of one or more unit operations. For the purposes of this subpart, process includes all or a combination of reaction, recovery, separation, purification, or other activity, operation, manufacture, or treatment which are used to produce a pharmaceutical product. Cleaning operations conducted are considered part of the process. The holding of the pharmaceutical product in tanks or other holding equipment for more than 30 consecutive days, or transfer of the pharmaceutical product to containers for shipment, marks the end of a process, and the tanks are considered part of the PMPU that produced the stored material. When material from one unit operation is used as the feedstock for the production of two or more different pharmaceutical products, the unit operation is considered the endpoint of the process that produced the material, and the unit operations into which the material is routed mark the beginning of the other processes. Nondedicated recovery devices located within a contiguous area within the affected source are considered single processes. Nondedicated formulation operations occurring within a contiguous area are considered a single process that is used to formulate numerous materials and/or products. Quality Assurance and Quality Control laboratories are not considered part of any process.

Process condenser means a condenser whose primary purpose is to recover material as an integral part of a process. The condenser must support a vapor-to-liquid phase change for periods of source equipment operation that are at or above the boiling or bubble point of substance(s) at the liquid surface. Examples of process condensers include distillation condensers, reflux condensers, and condensers used in stripping or flashing operations. In a series of condensers, all condensers up to and including the first condenser with an exit gas temperature below the boiling or bubble point of the substance(s) at the liquid surface are considered to be process condensers. All condensers in line prior to a vacuum source are included in this definition.

Process tank means a tank that is used to collect material discharged from a feedstock storage tank or unit operation within the process and transfer this material to another unit operation within the process or to a product storage tank. Surge control vessels and bottoms receivers that fit these conditions are considered process tanks.

Process vent means a vent from a unit operation or vents from multiple unit operations within a process that are manifolded together into a common header, through which a HAP-containing gas stream is, or has the potential to be, released to the atmosphere. Examples of process vents include, but are not limited to, vents on condensers used

for product recovery, bottom receivers, surge control vessels, reactors, filters, centrifuges, and process tanks. Emission streams that are undiluted and uncontrolled containing less than 50 ppmv HAP, as determined through process knowledge that no HAP are present in the emission stream or using an engineering assessment as discussed in § 63.1257(d)(2)(ii), test data using Methods 18 of 40 CFR part 60, appendix A, or any other test method that has been validated according to the procedures in Method 301 of appendix A of this part, are not considered process vents. Process vents do not include vents on storage tanks regulated under § 63.1253, vents on wastewater emission sources regulated under § 63.1256, or pieces of equipment regulated under § 63.1255.

Production-indexed HAP consumption factor is the result of dividing the annual consumption of total HAP by the annual production rate, per process.

Production-indexed volatile organic compound (VOC) consumption factor is the result of dividing the annual consumption of total VOC by the annual production rate, per process.

Publicly owned treatment works (POTW) means any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature as defined in section 212(2)(A) of the Clean

Water Act, as amended [33 U.S.C. § 1292(2)(A)]. A POTW includes the treatment works, intercepting sewers, outfall sewers, sewage collection systems, pumping, power, and other equipment. The POTW is defined at 40 CFR 403.3(0).

Reactor means a device or vessel in which one or more chemicals or reactants, other than air, are combined or decomposed in such a way that their molecular structures are altered and one or more new organic compounds are formed.

Recovery device, as used in the wastewater provisions, means an individual unit of equipment used for the purpose of recovering chemicals for fuel value (i.e., net positive heating value), use, reuse, or for sale for fuel value, use or reuse. Examples of equipment that may be recovery devices include organic removal devices such as decanters, strippers, or thin-film evaporation units. To be a recovery device, a decanter and any other equipment based on the operating principle of gravity separation must receive only two-phase liquid streams.

Research and development facility means any stationary source whose primary purpose is to conduct research and development into new processes and products, where such source is operated under the close supervision of technically trained personnel, and is not engaged in the manufacture of products for commercial sale in commerce, except in a de minimis manner.

Residual means any HAP-containing liquid or solid material that is removed from a wastewater stream by a waste management unit or treatment process that does not destroy organics (nondestructive unit). Examples of residuals from nondestructive waste management units are: the organic layer and bottom residue removed by a decanter or organic-water separator and the overheads from a steam stripper or air stripper. Examples of materials which are not residuals are: silt; mud; leaves; bottoms from a steam stripper or air stripper; and sludges, ash, or other materials removed from wastewater being treated by destructive devices such as biological treatment units and incinerators.

Safety device means a closure device such as a pressure relief valve, frangible disc, fusible plug, or any other type of device which functions exclusively to prevent physical damage or permanent deformation to a unit or its air emission control equipment by venting gases or vapors directly to the atmosphere during unsafe conditions resulting from an unplanned, accidental, or emergency event. For the purposes of this subpart, a safety device is not used for routine venting of gases or vapors from the vapor headspace underneath a cover such as during filling of the unit or to adjust the pressure in this vapor headspace in response to normal daily diurnal ambient temperature fluctuations. A safety device is designed to remain in a

closed position during normal operations and open only when the internal pressure, or another relevant parameter, exceeds the device threshold setting applicable to the air emission control equipment as determined by the owner or operator based on manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, combustible, explosive, reactive, or hazardous materials.

Sewer line means a lateral, trunk line, branch line, or other conduit including, but not limited to, grates, trenches, etc., used to convey wastewater streams or residuals to a downstream waste management unit.

Shutdown means the cessation of operation of a PMPU or an individual piece of equipment required or used to comply with this part or for emptying and degassing storage tanks. Shutdown occurs for purposes including but not limited to: periodic maintenance, replacement of equipment, or repair. Shutdown does not apply to routine batch operations or the rinsing or washing of equipment in batch operations between batches.

Single-seal system means a floating roof having one continuous seal that completely covers the space between the wall of the storage tank and the edge of the floating roof.



This seal may be a vapor-mounted, liquid-mounted, or metallic shoe seal.

Small control device means a control device that controls process vents with total emissions of less than 10 tons of HAP per year, before control.

Soluble HAP means a HAP listed in Table 3 of this subpart.

Startup means the first time a new or reconstructed source begins production, or, for new equipment added, including equipment used to comply with this subpart, the first time the equipment is put into operation, or for the introduction of a new product/process, the first time the product or process is run in equipment.

Storage tank means a tank or other vessel that is used to store organic liquids that contain one or more HAP as feedstocks or products of a PMPU. The following are not considered storage tanks for the purposes of this subpart:

- (1) Vessels permanently attached to motor vehicles such as trucks, railcars, barges, or ships;
- (2) Pressure vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere;
- (3) Vessels storing organic liquids that contain HAP only as impurities;
- (4) Wastewater storage tanks; and
- (5) Process tanks.

Surface impoundment means a waste management unit which is a natural topographic depression, manmade excavation, or diked area formed primarily of earthen materials (although it may be lined with manmade materials), which is designed to hold an accumulation of liquid wastes or waste containing free liquids. A surface impoundment is used for the purpose of treating, storing, or disposing of wastewater or residuals, and is not an injection well. Examples of surface impoundments are equalization, settling, and aeration pits, ponds, and lagoons.

Total organic compounds (TOC) means those compounds measured according to the procedures of Method 18 or Method 25A, 40 CFR part 60, appendix A.

Treatment process means a specific technique that removes or destroys the organics in a wastewater or residual stream such as a steam stripping unit, thin-film evaporation unit, waste incinerator, biological treatment unit, or any other process applied to wastewater streams or residuals to comply with § 63.1256. Most treatment processes are conducted in tanks. Treatment processes are a subset of waste management units.

Uncontrolled HAP emissions means a gas stream containing HAP which has exited the process (or process condenser, if any), but which has not yet been introduced into an air pollution control device to reduce the mass of

HAP in the stream. If the process vent is not routed to an air pollution control device, uncontrolled emissions are those HAP emissions released to the atmosphere.

Unit operation means those processing steps that occur within distinct equipment that are used, among other things, to prepare reactants, facilitate reactions, separate and purify products, and recycle materials. Equipment used for these purposes includes but is not limited to reactors, distillation columns, extraction columns, absorbers, decanters, dryers, condensers, and filtration equipment.

Vapor-mounted seal means a continuous seal that completely covers the annular space between the wall, the storage tank or waste management unit and the edge of the floating roof and is mounted such that there is a vapor space between the stored liquid and the bottom of the seal.

Volatile organic compounds (VOC) means those materials defined in 40 CFR 51.100.

Waste management unit means the equipment, structure(s), and or devices used to convey, store, treat, or dispose of wastewater streams or residuals. Examples of waste management units include wastewater tanks, air flotation units, surface impoundments, containers, oil-water or organic-water separators, individual drain systems, biological wastewater treatment units, waste incinerators, and organic removal devices such as steam and air stripper

units, and thin film evaporation units. If such equipment is used for recovery then it is part of a pharmaceutical process and is not a waste management unit.

Wastewater means any portion of an individual wastewater stream or any aggregation of wastewater streams.

Wastewater stream means water that is discarded from a PMPU through a single POD, that contains an annual average concentration of partially soluble and/or soluble HAP compounds of at least 5 parts per million by weight and a load of at least 0.05 kg/yr, and that is not exempted by the provisions of § 63.1256(a)(3). For the purposes of this subpart, noncontact cooling water is not considered a wastewater stream. Wastewater streams are generated by both process operations and maintenance activities.

Wastewater tank means a stationary waste management unit that is designed to contain an accumulation of wastewater or residuals and is constructed primarily of nonearthen materials (e.g., wood, concrete, steel, plastic) which provide structural support. Wastewater tanks used for flow equalization are included in this definition.

Water seal controls means a seal pot, p-leg trap, or other type of trap filled with water (e.g., flooded sewers that maintain water levels adequate to prevent air flow through the system) that creates a water barrier between the sewer line and the atmosphere. The water level of the seal

must be maintained in the vertical leg of a drain in order to be considered a water seal.

§ 63.1252 Standards: General.

Each owner or operator of any affected source subject to the provisions of this subpart shall control HAP emissions to the level specified in this section on and after the compliance dates specified in § 63.1250(f). Compliance with the emission limits may be demonstrated initially through the provisions of § 63.1257 (Test methods and compliance procedures) and continuously through the provisions of § 63.1258 (Monitoring requirements).

(a) Opening of a safety device. Opening of a safety device, as defined in § 63.1251, is allowed at any time conditions require it to do so to avoid unsafe conditions.

(b) Closed-vent systems. The owner or operator of a closed-vent system that contains bypass lines that could divert a vent stream away from a control device used to comply with the requirements in §§ 63.1253, 63.1254, and 63.1256 shall comply with the requirements of Table 4 and paragraph (b)(1) or (2) of this section. Equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, rupture disks and pressure relief valves needed for safety purposes are not subject to this paragraph.

(1) Install, calibrate, maintain, and operate a flow indicator that determines whether vent stream flow is present at least once every 15 minutes. Records shall be maintained as specified in § 63.1259(i)(6)(i). The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream away from the control device to the atmosphere; or

(2) Secure the bypass line valve in the closed position with a car seal or lock and key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line. Records shall be maintained as specified in § 63.1259(i)(6)(ii).

(c) Heat exchange systems. Except as provided in paragraph (c)(2) of this section, owners and operators of affected sources shall comply with the requirements in paragraph (c)(1) of this section for heat exchange systems that cool process equipment or materials used in pharmaceutical manufacturing operations.

(1) The heat exchange system shall be treated according to the provisions of § 63.104, except that the monitoring frequency shall be no less than quarterly.

(2) For identifying leaking equipment, the owner or operator of heat exchange systems on equipment which meet

current good manufacturing practice (CGMP) requirements of 21 CFR part 211 may elect to use the physical integrity of the reactor as the surrogate indicator of heat exchange system leaks around the reactor.

(d) Emissions averaging provisions. Except as specified in paragraphs (d)(1) through (5) of this section, owners or operators of storage tanks or processes subject to the provisions of §§ 63.1253 and 63.1254 may choose to comply by using emissions averaging requirements specified in § 63.1257(g) or (h) for any storage tank or process.

(1) A State may prohibit averaging of HAP emissions and require the owner or operator of an existing source to comply with the provisions in §§ 63.1253 and 63.1254.

(2) Only emission sources subject to the requirements of § 63.1253(b)(1) and (c)(1) or § 63.1254(a)(2), (a)(3)(ii)(A) or (a)(3)(iii) may be included in any averaging group.

(3) Processes which have been permanently shutdown or storage tanks permanently taken out of HAP service may not be included in any averaging group.

(4) Processes and storage tanks already controlled on or before November 15, 1990 may not be included in an emissions averaging group, except where the level of control is increased after November 15, 1990. In these cases, the uncontrolled emissions shall be the controlled emissions as

calculated on November 15, 1990 for the purpose of determining the uncontrolled emissions as specified in § 63.1257(g) and (h).

(5) Emission points controlled to comply with a State or Federal rule other than this subpart may not be included in an emission averaging group, unless the level of control has been increased after November 15, 1990 above what is required by the other State or Federal rule. Only the control above what is required by the other State or Federal rule will be credited. However, if an emission point has been used to generate emissions averaging credit in an approved emissions average, and the point is subsequently made subject to a State or Federal rule other than this subpart, the point can continue to generate emissions averaging credit for the purpose of complying with the previously approved average.

(6) Not more than 20 processes subject to § 63.1254(a)(2)(i), 20 storage tanks subject to § 63.1253(b)(1), and 20 storage tanks subject to § 63.1253(c)(1)(i) at an affected source may be included in an emissions averaging group.

(7) Compliance with the emissions standards in § 63.1253 shall be satisfied when the annual percent reduction efficiency is greater than or equal to 90 percent for those tanks meeting the requirements of § 63.1253(a)(1)



and 95 percent for those tanks meeting the requirements of § 63.1253(a)(2), as demonstrated using the test methods and compliance procedures specified in § 63.1257(g).

(8) Compliance with the emissions standards in § 63.1254(a)(2) shall be satisfied when the annual percent reduction efficiency is greater than or equal to 93 percent, as demonstrated using the test methods and compliance procedures specified in § 63.1257(h).

(e) Pollution prevention alternative. Except as provided in paragraph (e)(1) of this section, owners and operators may choose to meet the pollution prevention alternative requirement specified in either paragraph (e)(2) or (3) of this section for any PMPU, in lieu of the requirements specified in §§ 63.1253, 63.1254, 63.1255, and 63.1256. Compliance with paragraphs (e)(2) and (3) of this section shall be demonstrated through the procedures in § 63.1257(f).

(1) The HAP that are generated in the PMPU that are not part of the production-indexed consumption factor must be controlled according to the requirements of §§ 63.1253, 63.1254, 63.1255, and 63.1256. The HAP that are generated as a result of combustion control of emissions must be controlled according to the requirements of paragraph (g) of this section.

(2) The production-indexed HAP consumption factor (kg HAP consumed/kg produced) shall be reduced by at least 75 percent from a 3 year average baseline established no earlier than the 1987 calendar year, or for the time period from startup of the process until the present in which the PMPU was operational and data are available, whichever is the lesser time period. If a time period less than 3 years is used to set the baseline, the data must represent at least 1 year's worth of data. For any reduction in the HAP factor achieved by reducing a HAP that is also a VOC, an equivalent reduction in the VOC factor is also required. For any reduction in the HAP factor that is achieved by reducing a HAP that is not a VOC, the VOC factor may not be increased.

(3) Both requirements specified in paragraphs (e)(3)(i) and (ii) of this section are met.

(i) The production-indexed HAP consumption factor (kg HAP consumed/kg produced) shall be reduced by at least 50 percent from a 3-year average baseline established no earlier than the 1987 calendar year, or for the time period from startup of the process until the present in which the PMPU was operational and data are available, whichever is less. If a time period less than 3 years is used to set the baseline, the data must represent at least 1 year's worth of data. For any reduction in the HAP factor achieved by

reducing a HAP that is also a VOC, an equivalent reduction in the VOC factor is also required. For any reduction in the HAP factor that is achieved by reducing a HAP that is not a VOC, the VOC factor may not be increased.

(ii) The total PMPU HAP emissions shall be reduced by an amount, in kg/yr, that, when divided by the annual production rate, in kg/yr, and added to the reduction of the production-indexed HAP consumption factor, in kg/kg, yields a value of at least 75 percent of the average baseline HAP production-indexed consumption factor established according to paragraph (e)(3)(i) of this section according to the equation provided in § 63.1257(f)(2)(ii)(A). The total PMPU VOC emissions shall be reduced by an amount calculated according to the equation provided in § 63.1257(f)(2)(ii)(B). The annual reduction in HAP and VOC air emissions must be due to the use of the following control devices:

(A) Combustion control devices such as incinerators, flares or process heaters.

(B) Control devices such as condensers and carbon adsorbers whose recovered product is destroyed or shipped offsite for destruction.

(C) Any control device that does not ultimately allow for recycling of material back to the PMPU.

(D) Any control device for which the owner or operator can demonstrate that the use of the device in controlling HAP emissions will have no effect on the production-indexed consumption factor for the PMPU.

(f) Control requirements for certain liquid streams in open systems within a PMPU.

(1) The owner or operator shall comply with the provisions of Table 5 of this subpart, for each item of equipment meeting all the criteria specified in paragraphs (f)(2) through (4) and either paragraph (f)(5)(i) or (ii) of this section.

(2) The item of equipment is of a type identified in Table 5 of this subpart;

(3) The item of equipment is part of a PMPU, as defined in § 63.1251;

(4) The item of equipment is controlled less stringently than in Table 5 of this subpart and the item of equipment is not otherwise exempt from controls by the provisions of this subpart or subpart A of this part; and

(5) The item of equipment:

(i) Is a drain, drain hub, manhole, lift station, trench, pipe, or oil/water separator that conveys water with an annual average concentration greater than or equal to 1,300 parts per million by weight (ppmw) of partially soluble HAP compounds; or an annual average concentration

greater than or equal to 5,200 ppmw of partially soluble and/or soluble HAP compounds. The annual average concentration shall be determined according to the procedures in § 63.1257(e)(1)(ii).

(ii) Is a tank that receives one or more streams that contain water with an annual average concentration greater than or equal to 1,300 ppmw of partially soluble HAP compounds, or greater than or equal to 5,200 ppmw of total partially soluble and/or soluble HAP compounds. The owner or operator of the source shall determine the average concentration of the stream at the inlet to the tank and according to the procedures in § 63.1257(e)(1)(ii).

(g) Control requirements for halogenated vent streams that are controlled by combustion devices. If a combustion device is used to comply with the provisions of §§ 63.1253 (storage tanks), 63.1254 (process vents), 63.1256(h) (wastewater vent streams) for a halogenated vent stream, then the vent stream shall be ducted to a halogen reduction device such as, but not limited to, a scrubber, before it is discharged to the atmosphere. The halogen reduction device must reduce emissions by the amounts specified in either paragraph (g)(1) or (2) of this section.

(1) A halogen reduction device after the combustion control device must reduce overall emissions of hydrogen

halides and halogens, as defined in § 63.1251, by 95 percent or to a concentration less than or equal to 20 ppmv.

(2) A halogen reduction device located before the combustion control device must reduce the halogen atom content of the vent stream to a concentration less than or equal to 20 ppmv.

§ 63.1253 Standards: Storage tanks.

(a) Except as provided in paragraphs (d) and (e) of this section, the owner or operator of a storage tank meeting the criteria of paragraph (a)(1) of this section is subject to the requirements of paragraph (b) of this section. Except as provided in paragraphs (d) and (e) of this section, the owner or operator of a storage tank meeting the criteria of paragraph (a)(2) of this section is subject to the requirements of paragraph (c) of this section. Compliance with the provisions of paragraphs (b) and (c) of this section is demonstrated using the initial compliance procedures in § 63.1257(c) and the monitoring requirements in § 63.1258.

(1) A storage tank with a design capacity greater than or equal to 38 m<sup>3</sup> (10,000 gallons [gal]) but less than 75 m<sup>3</sup> (20,000 gal), and storing a liquid for which the maximum true vapor pressure of total HAP is greater than or equal to 13.1 kPa (1.9 psia).

(2) A storage tank with a design capacity greater than or equal to 75 m<sup>3</sup> (20,000 gal) storing a liquid for which the maximum true vapor pressure of total HAP is greater than or equal to 13.1 kPa (1.9 psia).

(b) The owner or operator of a storage tank shall equip the affected storage tank with either a fixed roof with internal floating roof, an external floating roof, an external floating roof converted to an internal floating roof, or a closed-vent system meeting the conditions of § 63.1252(b) with a control device that meets any of the following conditions:

(1) Reduces inlet emissions of total HAP by 90 percent by weight or greater;

(2) Is an enclosed combustion device that provides a minimum residence time of 0.5 seconds at a minimum temperature of 760°C;

(3) Is a flare that meets the requirements of §63.11(b); or

(4) Is a control device specified in §63.1257(a)(4).

(c) The owner or operator of a storage tank shall equip the affected storage tank with either a fixed roof with internal floating roof, an external floating roof, an external floating roof converted to an internal floating roof, or a closed-vent system meeting the conditions of

§ 63.1252(b) with a control device that meets any of the following conditions:

(1) Reduces inlet emissions of total HAP as specified in paragraph (c)(1)(i) or (ii) of this section:

(i) By 95 percent by weight or greater; or

(ii) If the owner or operator can demonstrate that a control device installed on a storage tank on or before April 2, 1997 is designed to reduce inlet emissions of total HAP by greater than or equal to 90 percent by weight but less than 95 percent by weight, then the control device is required to be operated to reduce inlet emissions of total HAP by 90 percent or greater.

(2) Is an enclosed combustion device that provides a minimum residence time of 0.5 seconds at a minimum temperature of 760°C;

(3) Is a flare that meets the requirements of §63.11(b); or

(4) Is a control device specified in §63.1257(a)(4).

(d) As an alternative standard, the owner or operator of an existing or new affected source may comply with the storage tank standards by routing storage tank vents to a control device achieving an outlet TOC concentration, as calibrated on methane or the predominant HAP, of 20 ppmv or less, and an outlet concentration of hydrogen halides and halogens of 20 ppmv or less. Compliance with the outlet



concentrations shall be determined by the initial compliance procedures of § 63.1257(c)(4) and the continuous emission monitoring requirements of § 63.1258(b)(5).

(e) Planned routine maintenance. The specifications and requirements in paragraphs (b) through (d) of this section for control devices do not apply during periods of planned routine maintenance. Periods of planned routine maintenance of the control devices, during which the control device does not meet the specifications of paragraphs (b) through (d) of this section, as applicable, shall not exceed 240 hours per year.

§ 63.1254 Standards: Process vents.

(a) Existing sources. Except as provided in paragraph (c) of this section, the owner or operator of an existing affected source must control the collection of all gas streams originating from processes subject to this standard so as to comply with the requirements in paragraph (a)(1) or the requirements of paragraphs (a)(2) and (a)(3) of this section. If any vent within a process meets the criteria of paragraph (a)(3)(i) of this section, the owner or operator must comply with the provisions in paragraphs (a)(2) and (a)(3) for that process. The requirements of paragraphs (a)(1) and (2) of this section apply to all process vents within a process, as a group, and do not apply to individual vents. An owner or operator may

switch from compliance with paragraph (a)(1) of this section to compliance with paragraphs (a)(2) and (3) of this section only after at least 1 year of operation in compliance with paragraph (a)(1) of this section. An owner or operator may switch from compliance with paragraphs (a)(2) and (3) of this section to compliance with paragraph (a)(1) of this section at any time. Notification of such a change in the compliance method shall be reported according to the procedures in § 63.1260 (h) of this subpart. Compliance with the required emission limits or reductions in paragraphs (a)(1) through (3) of this section may be demonstrated using the initial compliance procedures described in § 63.1257(d) and the monitoring requirements described in § 63.1258.

(1) Except for processes with a vent that meets the conditions in paragraph (a)(3)(i) of this section, actual HAP emissions shall not exceed 900 kilograms (kg) per year [2,000 pounds per year] from the sum of all process vents within a process.

(i) Except as provided in (a)(1)(ii) of this section, the owner or operator is limited to 7 processes in any 365-day period that can be selected to comply with (a)(1) of this section.

(ii) The owner or operator may exclude processes with less than 100 lb/yr HAP, on an uncontrolled basis, from the 7-process limit described in (a)(1)(i) of this section.

(2) Uncontrolled HAP emissions from the sum of all process vents within a process that do not meet the conditions in paragraph (a)(3)(i) of this section or are not controlled according to any of the requirements of paragraphs (a)(2)(i), (ii), (iii), or (c) of this section shall be reduced by 93 percent or greater by weight.

(i) To outlet concentrations less than or equal to 20 ppmv as TOC and less than or equal to 20 ppmv as hydrogen halides and halogens;

(ii) By a flare that meets the requirements of § 63.11(b); or

(iii) By a control device specified in § 63.1257(a)(4).

(3) Except as provided in paragraph (a)(3)(iii) of this section, uncontrolled HAP emissions from each process vent that meets the conditions in paragraph (a)(3)(i) of this section shall be reduced as specified in paragraph (a)(3)(ii) of this section.

(i) Uncontrolled HAP emissions from a process vent shall be reduced as specified in paragraph (a)(3)(ii) if the vent meets either of the criteria described in (A) or (B), below:

(A) The flow-weighted average flowrate calculated using Equation 1 of this subpart is less than or equal to the flowrate calculated using Equation 2 of this subpart.

$$FR_a = \frac{\sum_{i=1}^n (D_i)(FR_i)}{\sum_{i=1}^n D_i} \quad (\text{Eq. 1})$$

$$FR = 0.02 * (HL) - 1,000 \quad (\text{Eq. 2})$$

where:

$FR_a$  = flow-weighted average flowrate for the vent, scfm

$D_i$  = duration of each emission event, min

$FR_i$  = flowrate of each emission event, scfm

$n$  = number of emission events

$FR$  = flowrate, scfm

$HL$  = annual uncontrolled HAP emissions, lb/yr, as defined in § 63.1251

(B) As an alternative to the criteria described in paragraph (a)(3)(i)(A) of this section, uncontrolled HAP emissions from a process vent shall be reduced or controlled as specified in paragraph (a)(3)(ii) of this section if the process vent meets the criteria specified in paragraphs (a)(3)(i)(B)(1) and (2) of this section or the criteria specified in paragraphs (a)(3)(i)(B)(1) and (3) of this section.

(1) Uncontrolled HAP emissions from the process vent exceed 25 tons per year.

(2) The flow-weighted average flowrate for the vent, as calculated in Equation 1 of this section, is less than or equal to 100 scfm.

(3) The flow weighted average is greater than 100 scfm and less than or equal to the flowrate calculated using Equation 2 of this section.

(ii) Uncontrolled HAP emissions shall be reduced:

(A) By 98 percent by weight or greater; or

(B) To outlet concentrations less than or equal to 20 ppmv as TOC and less than or equal to 20 ppmv as hydrogen halides and halogens; or

(C) By a flare that meets the requirements of §63.11(b); or

(D) By a control device specified in §63.1257(a)(4).

(iii) If the owner or operator can demonstrate that a control device, installed on a process vent that meets the conditions of paragraph (a)(3)(i) of this section on or before April 2, 1997, was designed to reduce uncontrolled HAP emissions of total HAP by greater than or equal to 93 percent by weight, but less than 98 percent by weight, then the control device is required to be operated to reduce inlet emissions of total HAP by 93 percent by weight or greater.

(b) New sources. Uncontrolled HAP emissions from the sum of all process vents within a process at a new affected source that are not controlled according to any of the requirements of paragraphs (b)(1), (2), or (3) of this section or paragraph (c) of this section shall be reduced by 98 percent or greater by weight if the uncontrolled HAP emissions from the sum of all process vents within a process is greater than 180 kg/yr (400 lb/yr). Compliance with the required emission limit or reduction is demonstrated using the initial compliance procedures in § 63.1257(d) and the monitoring requirements described in § 63.1258.

(1) To outlet concentrations less than or equal to 20 ppmv as TOC and less than or equal to 20 ppmv as hydrogen halides and halogens;

(2) By a flare that meets the requirements of §63.11(b); or

(3) By a control device specified in §63.1257(a)(4).

(c) As an alternative standard, the owner or operator of an existing or new affected source may comply with the process vent standards by routing all vents from a process to a control device achieving an outlet TOC concentration, as calibrated on methane or the predominant HAP, of 20 ppmv or less, and an outlet concentration of hydrogen halides and halogens of 20 ppmv or less. Any process vents within a process that are not routed to this control device must be

controlled in accordance with the provisions of paragraphs (a)(2), (a)(3), and (b) of this section, as applicable. Compliance with the outlet concentrations shall be determined by the initial compliance procedures described in § 63.1257(d)(1)(iv) and the continuous emission monitoring requirements described in § 63.1258(b)(5).

§ 63.1255 Standards: Equipment leaks.

The owner or operator of an affected source (existing or new) shall comply with the general equipment leak requirements of appendix A of this subpart.

§ 63.1256 Wastewater provisions.

(a) General. Each owner or operator of any affected source (existing or new) shall comply with the general wastewater requirements in paragraphs (a)(1) and (2) of this section.

(1) Identify wastewater that requires control. For each POD, the owner or operator shall comply with the requirements in either paragraph (a)(1)(i), or (ii) of this section to determine whether a wastewater stream is an affected wastewater stream that requires control for soluble and/or partially soluble HAP compounds or to designate the wastewater stream as an affected wastewater stream, respectively. The owner or operator may use a combination of the approaches in paragraphs (a)(1)(i) and (ii) of this section for different affected wastewater generated at the

source. The owner or operator shall also comply with the requirements for multiphase discharges in paragraph (a)(4) of this section. Wastewater identified in paragraph (a)(3) of this section is exempt from the provisions of this subpart.

(i) Determine characteristics of a wastewater stream.

At new and existing sources, a wastewater stream is an affected wastewater stream if the annual average concentration and annual load exceed any of the criteria specified in paragraphs (a)(1)(i)(A) through (C) of this section. At new sources, a wastewater stream is subject to additional control requirements if the annual average concentration and annual load exceed the criteria specified in paragraphs (a)(1)(i)(D) of this section. The owner or operator shall comply with the provisions of § 63.1257(e)(1) to determine the annual average concentrations and annual load of partially soluble and soluble HAP compounds.

(A) The wastewater stream contains partially soluble HAP compounds at an annual average concentration greater than 1,300 ppmw, and the total soluble and partially soluble HAP load in all wastewater from the PMPU exceeds 1 Mg/yr.

(B) The wastewater stream contains partially soluble and/or soluble HAP compounds at an annual average concentration of 5,200 ppmw, and the total soluble and



partially soluble HAP load in all wastewater from the PMPU exceeds 1 Mg/yr.

(C) The wastewater stream contains partially soluble and/or soluble HAP at an annual average concentration of greater than 10,000 ppmw, and the total partially soluble and/or soluble HAP load in all wastewater from the affected source is greater than 1 Mg/yr.

(D) The wastewater stream contains soluble HAP compounds at an annual average concentration greater than 110,000 ppmw, and the total soluble and partially soluble HAP load in all wastewater from the PMPU exceeds 1 Mg/yr.

(ii) Designate wastewater as affected wastewater. For existing sources, the owner or operator may elect to designate wastewater streams as meeting the criteria of either paragraphs (a)(1)(i)(A),(B), or (C) of this section. For new sources, the owner or operator may elect to designate wastewater streams meeting the criterion in paragraph (a)(1)(i)(D) or for wastewater known to contain no soluble HAP, as meeting the criterion in paragraph (a)(1)(i)(A) of this section. For designated wastewater the procedures specified in paragraphs (a)(1)(ii)(A) and (B) of this section shall be followed, except as specified in paragraphs (g)(8)(i), (g)(9)(i), and (g)(10) of this section. The owner or operator is not required to determine the annual average

concentration or load for each designated wastewater stream for the purposes of this section.

(A) From the POD for the wastewater stream that is designated as an affected wastewater stream to the location where the owner or operator elects to designate such wastewater stream as an affected wastewater stream, the owner or operator shall comply with all applicable emission suppression requirements specified in paragraphs (b) through (f) of this section.

(B) From the location where the owner or operator designates a wastewater stream as an affected wastewater stream, such wastewater stream shall be managed in accordance with all applicable emission suppression requirements specified in paragraphs (b) through (f) of this section and with the treatment requirements in paragraph (g) of this section.

(iii) Scrubber Effluent. Effluent from a water scrubber that has been used to control Table 2 HAP-containing vent streams that are controlled in order to meet the process vent requirements in § 63.1254 of this subpart is considered an affected wastewater stream.

(2) Requirements for affected wastewater.

(i) An owner or operator of a facility shall comply with the applicable requirements for wastewater tanks, surface impoundments, containers, individual drain systems,

and oil/water separators as specified in paragraphs (b) through (f) of this section, except as provided in paragraph (g)(3) of this section.

(ii) Comply with the applicable requirements for control of soluble and partially soluble compounds as specified in paragraph (g) of this section. Alternatively, the owner or operator may elect to comply with the treatment provisions specified in paragraph (a)(5) of this section.

(iii) Comply with the applicable monitoring and inspection requirements specified in § 63.1258.

(iv) Comply with the applicable recordkeeping and reporting requirements specified in §§ 63.1259 and 63.1260.

(3) Exempt wastewater. The following wastewaters are not subject to the wastewater provisions of this part:

(i) stormwater from segregated sewers;

(ii) water from fire-fighting and deluge systems, including testing of such systems;

(iii) spills; and

(iv) water from safety showers.

(4) Requirements for multiphase discharges. The owner or operator shall not discharge a separate phase that can be isolated through gravity separation from the aqueous phase to a waste management or treatment unit, unless the stream is discharged to a treatment unit in compliance with paragraph (g)(13) of this section.

(5) Offsite treatment or onsite treatment not owned or operated by the source. The owner or operator may elect to transfer affected wastewater streams that contain less than 50 ppmw of partially soluble HAP or a residual removed from such affected wastewater to an onsite treatment operation not owned or operated by the owner or operator of the source generating the wastewater or residual, or to an offsite treatment operation, provided that the waste management units up to the activated sludge unit are covered or the owner or operator demonstrates that less than 5 percent of the total soluble HAP is emitted from the these units.

(i) The owner or operator transferring the wastewater or residual shall:

(A) Comply with the provisions specified in paragraphs (b) through (f) of this section for each waste management unit that receives or manages affected wastewater or a residual removed from affected wastewater prior to shipment or transport.

(B) Include a notice with each shipment or transport of affected wastewater or residual removed from affected wastewater. The notice shall state that the affected wastewater or residual contains organic HAP that are to be treated in accordance with the provisions of this subpart. When the transport is continuous or ongoing (for example, discharge to a publicly-owned treatment works), the notice

shall be submitted to the treatment operator initially and whenever there is a change in the required treatment. The owner or operator shall keep a record of the notice in accordance with § 63.1259(g).

(ii) The owner or operator may not transfer the affected wastewater or residual unless the transferee has submitted to the EPA a written certification that the transferee will manage and treat any affected wastewater or residual removed from affected wastewater received from a source subject to the requirements of this subpart in accordance with the requirements of either:

(A) Paragraphs (b) through (i) of this section; or

(B) Subpart D of this part if alternative emission limitations have been granted the transferor in accordance with those provisions; or

(C) Section 63.6(g).

(iii) The certifying entity may revoke the written certification by sending a written statement to the EPA and the owner or operator giving at least 90 days notice that the certifying entity is rescinding acceptance of responsibility for compliance with the regulatory provisions listed in this paragraph. Upon expiration of the notice period, the owner or operator may not transfer the wastewater stream or residual to the treatment operation.

(iv) By providing this written certification to the EPA, the certifying entity accepts responsibility for compliance with the regulatory provisions listed in paragraph (a)(5)(ii) of this section with respect to any shipment of wastewater or residual covered by the written certification. Failure to abide by any of those provisions with respect to such shipments may result in enforcement action by the EPA against the certifying entity in accordance with the enforcement provisions applicable to violations of these provisions by owners or operators of sources.

(v) Written certifications and revocation statements, to the EPA from the transferees of wastewater or residuals shall be signed by the responsible official of the certifying entity, provide the name and address of the certifying entity, and be sent to the appropriate EPA Regional Office at the addresses listed in § 63.13. Such written certifications are not transferable by the treater.

(b) Wastewater tanks. For each wastewater tank that receives, manages, or treats affected wastewater or a residual removed from affected wastewater, the owner or operator shall comply with the requirements of either paragraph (b)(1) or (2) of this section as specified in Table 6 of this subpart.

(1) The owner or operator shall operate and maintain a fixed roof except when the contents of the wastewater tank are heated, treated by means of an exothermic reaction, or sparged, during which time the owner or operator shall comply with the requirements specified in paragraph (b)(2) of this section. For the purposes of this paragraph, the requirements of paragraph (b)(2) of this section are satisfied by operating and maintaining a fixed roof if the owner or operator demonstrates that the total soluble and partially soluble HAP emissions from the wastewater tank are no more than 5 percent higher than the emissions would be if the contents of the wastewater tank were not heated, treated by an exothermic reaction, or sparged.

(2) The owner or operator shall comply with the requirements in paragraphs (b)(3) through (9) of this section and shall operate and maintain one of the emission control techniques listed in paragraphs (b)(2)(i) through (iii) of this section.

(i) A fixed roof and a closed-vent system that routes the organic HAP vapors vented from the wastewater tank to a control device; or

(ii) A fixed roof and an internal floating roof that meets the requirements specified in § 63.119(b), with the differences noted in § 63.1257(c)(3)(i) through (iii) for the purposes of this subpart; or

(iii) An external floating roof that meets the requirements specified in §§ 63.119(c), 63.120(b)(5), and 63.120(b)(6), with the differences noted in § 63.1257(c)(3)(i) through (v) for the purposes of this subpart.

(3) If the owner or operator elects to comply with the requirements of paragraph (b)(2)(i) of this section, the fixed roof shall meet the requirements of paragraph (b)(3)(i) of this section, the control device shall meet the requirements of paragraph (b)(3)(ii) of this section, and the closed-vent system shall meet the requirements of paragraph (b)(3)(iii) of this section.

(i) The fixed roof shall meet the following requirements:

(A) Except as provided in paragraph (b)(3)(iv) of this section, the fixed roof and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be maintained in accordance with the requirements specified in § 63.1258(h).

(B) Each opening shall be maintained in a closed position (e.g., covered by a lid) at all times that the wastewater tank contains affected wastewater or residual removed from affected wastewater except when it is necessary to use the opening for wastewater sampling, removal, or for equipment inspection, maintenance, or repair.



(ii) The control device shall be designed, operated, and inspected in accordance with the requirements of paragraph (h) of this section.

(iii) Except as provided in paragraph (b)(3)(iv) of this section, the closed-vent system shall be inspected in accordance with the requirements of § 63.1258(h).

(iv) For any fixed roof tank and closed-vent system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements specified in § 63.1258(h).

(4) If the owner or operator elects to comply with the requirements of paragraph (b)(2)(ii) of this section, the floating roof shall be inspected according to the procedures specified in § 63.120(a)(2) and (3), with the differences noted in § 63.1257(c)(3)(iv) for the purposes of this subpart.

(5) Except as provided in paragraph (b)(6) of this section, if the owner or operator elects to comply with the requirements of paragraph (b)(2)(iii) of this section, seal gaps shall be measured according to the procedures specified in § 63.120(b)(2)(i) through (b)(4) and the wastewater tank shall be inspected to determine compliance with § 63.120(b)(5) and (6) according to the schedule specified in § 63.120(b)(1)(i) through (iii).

(6) If the owner or operator determines that it is unsafe to perform the seal gap measurements specified in § 63.120(b)(2)(i) through (b)(4) or to inspect the wastewater tank to determine compliance with § 63.120(b)(5) and (6) because the floating roof appears to be structurally unsound and poses an imminent or potential danger to inspecting personnel, the owner or operator shall comply with the requirements in either paragraph (b)(6)(i) or (ii) of this section.

(i) The owner or operator shall measure the seal gaps or inspect the wastewater tank within 30 calendar days of the determination that the floating roof is unsafe, or

(ii) The owner or operator shall empty and remove the wastewater tank from service within 45 calendar days of determining that the roof is unsafe. If the wastewater tank cannot be emptied within 45 calendar days, the owner or operator may utilize up to two extensions of up to 30 additional calendar days each. Documentation of a decision to utilize an extension shall include an explanation of why it was unsafe to perform the inspection or seal gap measurement, shall document that alternate storage capacity is unavailable, and shall specify a schedule of actions that will ensure that the wastewater tank will be emptied as soon as possible.

(7) Except as provided in paragraph (b)(6) of this section, each wastewater tank shall be inspected initially, and semiannually thereafter, for improper work practices in accordance with § 63.1258(g). For wastewater tanks, improper work practice includes, but is not limited to, leaving open any access door or other opening when such door or opening is not in use.

(8) Except as provided in paragraph (b)(6) of this section, each wastewater tank shall be inspected for control equipment failures as defined in paragraph (b)(8)(i) of this section according to the schedule in paragraphs (b)(8)(ii) and (iii) of this section in accordance with § 63.1258(g).

(i) Control equipment failures for wastewater tanks include, but are not limited to, the conditions specified in paragraphs (b)(8)(i)(A) through (I) of this section.

(A) The floating roof is not resting on either the surface of the liquid or on the leg supports.

(B) There is stored liquid on the floating roof.

(C) A rim seal is detached from the floating roof.

(D) There are holes, tears, cracks or gaps in the rim seal or seal fabric of the floating roof.

(E) There are visible gaps between the seal of an internal floating roof and the wall of the wastewater tank.

(F) There are gaps between the metallic shoe seal or the liquid mounted primary seal of an external floating roof

and the wall of the wastewater tank that exceed 212 square centimeters per meter of tank diameter or the width of any portion of any gap between the primary seal and the tank wall exceeds 3.81 centimeters.

(G) There are gaps between the secondary seal of an external floating roof and the wall of the wastewater tank that exceed 21.2 square centimeters per meter of tank diameter or the width of any portion of any gap between the secondary seal and the tank wall exceeds 1.27 centimeters.

(H) Where a metallic shoe seal is used on an external floating roof, one end of the metallic shoe does not extend into the stored liquid or one end of the metallic shoe does not extend a minimum vertical distance of 61 centimeters above the surface of the stored liquid.

(I) A gasket, joint, lid, cover, or door has a crack or gap, or is broken.

(ii) The owner or operator shall inspect for the control equipment failures in paragraphs (b)(8)(i)(A) through (H) according to the schedule specified in paragraphs (b)(4) and (5) of this section.

(iii) The owner or operator shall inspect for the control equipment failures in paragraph (b)(8)(i)(I) of this section initially, and semiannually thereafter.

(9) Except as provided in paragraph (i) of this section, when an improper work practice or a control

equipment failure is identified, first efforts at repair shall be made no later than 5 calendar days after identification and repair shall be completed within 45 calendar days after identification. If a failure that is detected during inspections required by this section cannot be repaired within 45 calendar days and if the tank cannot be emptied within 45 calendar days, the owner or operator may utilize up to two extensions of up to 30 additional calendar days each. Documentation of a decision to utilize an extension shall include a description of the failure, shall document that alternate storage capacity is unavailable, and shall specify a schedule of actions that will ensure that the control equipment will be repaired or the tank will be emptied as soon as practical.

(c) Surface impoundments. For each surface impoundment that receives, manages, or treats affected wastewater or a residual removed from affected wastewater, the owner or operator shall comply with the requirements of paragraphs (c)(1), (2), and (3) of this section.

(1) The owner or operator shall operate and maintain on each surface impoundment either a cover (e.g., air-supported structure or rigid cover) and a closed-vent system that routes the organic hazardous air pollutants vapors vented from the surface impoundment to a control device in accordance with paragraphs (c)(1)(i), (iii), (iv), and (v)

of this section, or a floating flexible membrane cover as specified in paragraph (c)(1)(ii) of this section.

(i) The cover and all openings shall meet the following requirements:

(A) Except as provided in paragraph (c)(1)(iv) of this section, the cover and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be maintained in accordance with the requirements specified in § 63.1258(h).

(B) Each opening shall be maintained in a closed position (e.g., covered by a lid) at all times that affected wastewater or residual removed from affected wastewater is in the surface impoundment except when it is necessary to use the opening for sampling, removal, or for equipment inspection, maintenance, or repair.

(C) The cover shall be used at all times that affected wastewater or residual removed from affected wastewater is in the surface impoundment except during removal of treatment residuals in accordance with 40 CFR 268.4 or closure of the surface impoundment in accordance with 40 CFR 264.228.

(ii) Floating flexible membrane covers shall meet the requirements specified in paragraphs (c)(1)(ii)(A) through (F) of this section.

(A) The floating flexible cover shall be designed to float on the liquid surface during normal operations, and to

form a continuous barrier over the entire surface area of the liquid.

(B) The cover shall be fabricated from a synthetic membrane material that is either:

(1) High density polyethylene (HDPE) with a thickness no less than 2.5 millimeters (100 mils); or

(2) A material or a composite of different materials determined to have both organic permeability properties that are equivalent to those of the material listed in paragraph (c)(1)(ii)(B)(1) of this section, and chemical and physical properties that maintain the material integrity for the intended service life of the material.

(C) The cover shall be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between cover section seams or between the interface of the cover edge and its foundation mountings.

(D) Except as provided for in paragraph (c)(1)(ii)(E) of this section, each opening in the floating membrane cover shall be equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device.

(E) The floating membrane cover may be equipped with one or more emergency cover drains for removal of

stormwater. Each emergency cover drain shall be equipped with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening or a flexible fabric sleeve seal.

(F) The closure devices shall be made of suitable materials that will minimize exposure of organic HAP to the atmosphere, to the extent practical, and will maintain the integrity of the equipment throughout its intended service life. Factors to be considered in designing the closure devices shall include: the effects of any contact with the liquid and its vapor managed in the surface impoundment; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the surface impoundment on which the floating membrane cover is installed.

(G) Whenever affected wastewater or residual from affected wastewater is in the surface impoundment, the floating membrane cover shall float on the liquid and each closure device shall be secured in the closed position. Opening of closure devices or removal of the cover is allowed to provide access to the surface impoundment for performing routine inspection, maintenance, or other activities needed for normal operations and/or to remove accumulated sludge or other residues from the bottom of surface impoundment. Openings shall be maintained in accordance with § 63.1258(h).



(iii) The control device shall be designed, operated, and inspected in accordance with paragraph (h) of this section.

(iv) Except as provided in paragraph (c)(1)(v) of this section, the closed-vent system shall be inspected in accordance with § 63.1258(h).

(v) For any cover and closed-vent system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements specified in § 63.1258(h).

(2) Each surface impoundment shall be inspected initially, and semiannually thereafter, for improper work practices and control equipment failures in accordance with § 63.1258(g).

(i) For surface impoundments, improper work practice includes, but is not limited to, leaving open any access hatch or other opening when such hatch or opening is not in use.

(ii) For surface impoundments, control equipment failure includes, but is not limited to, any time a joint, lid, cover, or door has a crack or gap, or is broken.

(3) Except as provided in paragraph (i) of this section, when an improper work practice or a control equipment failure is identified, first efforts at repair shall be made no later than 5 calendar days after

identification and repair shall be completed within 45 calendar days after identification.

(d) Containers. For each container that receives, manages, or treats affected wastewater or a residual removed from affected wastewater, the owner or operator shall comply with the requirements of paragraphs (d)(1) through (5) of this section.

(1) The owner or operator shall operate and maintain a cover on each container used to handle, transfer, or store affected wastewater or a residual removed from affected wastewater in accordance with the following requirements:

(i) Except as provided in paragraph (d)(3)(iv) of this section, if the capacity of the container is greater than 0.42 m<sup>3</sup>, the cover and all openings (e.g., bungs, hatches, sampling ports, and pressure relief devices) shall be maintained in accordance with the requirements specified in § 63.1258(h).

(ii) If the capacity of the container is less than or equal to 0.42 m<sup>3</sup>, the owner or operator shall comply with either paragraph (d)(1)(ii)(A) or (B) of this section.

(A) The container must meet existing Department of Transportation specifications and testing requirements under 49 CFR part 178; or

(B) Except as provided in paragraph (d)(3)(iv) of this section, the cover and all openings shall be maintained without leaks as specified in § 63.1258(h).

(iii) The cover and all openings shall be maintained in a closed position (e.g., covered by a lid) at all times that affected wastewater or a residual removed from affected wastewater is in the container except when it is necessary to use the opening for filling, removal, inspection, sampling, or pressure relief events related to safety considerations.

(2) For containers with a capacity greater than or equal to 0.42 m<sup>3</sup>, either a submerged fill pipe shall be used when a container is being filled by pumping with affected wastewater or a residual removed from affected wastewater or the container shall be located within an enclosure with a closed-vent system that routes the organic HAP vapors vented from the container to a control device.

(i) The submerged fill pipe outlet shall extend to no more than 6 inches or within two fill pipe diameters of the bottom of the container while the container is being filled.

(ii) The cover shall remain in place and all openings shall be maintained in a closed position except for those openings required for the submerged fill pipe and for venting of the container to prevent physical damage or permanent deformation of the container or cover.

(3) During treatment of affected wastewater or a residual removed from affected wastewater, including aeration, thermal or other treatment, in a container, whenever it is necessary for the container to be open, the container shall be located within an enclosure with a closed-vent system that routes the organic HAP vapors vented from the container to a control device.

(i) Except as provided in paragraph (d)(3)(iv) of this section, the enclosure and all openings (e.g., doors, hatches) shall be maintained in accordance with the requirements specified in § 63.1258(h).

(ii) The control device shall be designed, operated, and inspected in accordance with paragraph (h) of this section.

(iii) Except as provided in paragraph (d)(3)(iv) of this section, the closed-vent system shall be inspected in accordance with § 63.1258(h).

(iv) For any enclosure and closed-vent system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements specified in § 63.1258(h).

(4) Each container shall be inspected initially, and semiannually thereafter, for improper work practices and control equipment failures in accordance with § 63.1258(g).

(i) For containers, improper work practice includes, but is not limited to, leaving open any access hatch or other opening when such hatch or opening is not in use.

(ii) For containers, control equipment failure includes, but is not limited to, any time a cover or door has a gap or crack, or is broken.

(5) Except as provided in paragraph (i) of this subpart, when an improper work practice or a control equipment failure is identified, first efforts at repair shall be made no later than 5 calendar days after identification and repair shall be completed within 15 calendar days after identification.

(e) Individual drain systems. For each individual drain system that receives or manages affected wastewater or a residual removed from affected wastewater, the owner or operator shall comply with the requirements of paragraphs (e)(1), (2), and (3) or with paragraphs (e)(4), (5), and (6) of this section.

(1) If the owner or operator elects to comply with this paragraph, the owner or operator shall operate and maintain on each opening in the individual drain system a cover and if vented, route the vapors to a process or through a closed-vent system to a control device. The owner or operator shall comply with the requirements of paragraphs (e)(1)(i) through (v) of this section.

(i) The cover and all openings shall meet the following requirements:

(A) Except as provided in paragraph (e)(1)(iv) of this section, the cover and all openings (e.g., access hatches, sampling ports) shall be maintained in accordance with the requirements specified in § 63.1258(h).

(B) The cover and all openings shall be maintained in a closed position at all times that affected wastewater or a residual removed from affected wastewater is in the drain system except when it is necessary to use the opening for sampling or removal, or for equipment inspection, maintenance, or repair.

(ii) The control device shall be designed, operated, and inspected in accordance with paragraph (h) of this section.

(iii) Except as provided in paragraph (e)(1)(iv) of this section, the closed-vent system shall be inspected in accordance with § 63.1258(h).

(iv) For any cover and closed-vent system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements specified in § 63.1258(h).

(v) The individual drain system shall be designed and operated to segregate the vapors within the system from other drain systems and the atmosphere.

(2) Each individual drain system shall be inspected initially, and semiannually thereafter, for improper work practices and control equipment failures, in accordance with § 63.1258(g).

(i) For individual drain systems, improper work practice includes, but is not limited to, leaving open any access hatch or other opening when such hatch or opening is not in use for sampling or removal, or for equipment inspection, maintenance, or repair.

(ii) For individual drain systems, control equipment failure includes, but is not limited to, any time a joint, lid, cover, or door has a gap or crack, or is broken.

(3) Except as provided in paragraph (i) of this section, when an improper work practice or a control equipment failure is identified, first efforts at repair shall be made no later than 5 calendar days after identification and repair shall be completed within 15 calendar days after identification.

(4) If the owner or operator elects to comply with this paragraph, the owner or operator shall comply with the requirements in paragraphs (e)(4)(i) through (iii) of this section:

(i) Each drain shall be equipped with water seal controls or a tightly fitting cap or plug. The owner or

operator shall comply with paragraphs (e)(4)(i)(A) and (B) of this section.

(A) For each drain equipped with a water seal, the owner or operator shall ensure that the water seal is maintained. For example, a flow-monitoring device indicating positive flow from a main to a branch water line supplying a trap or water being continuously dripped into the trap by a hose could be used to verify flow of water to the trap. Visual observation is also an acceptable alternative.

(B) If a water seal is used on a drain receiving affected wastewater, the owner or operator shall either extend the pipe discharging the wastewater below the liquid surface in the water seal of the receiving drain, or install a flexible shield (or other enclosure which restricts wind motion across the open area between the pipe and the drain) that encloses the space between the pipe discharging the wastewater to the drain receiving the wastewater. (Water seals which are used on hubs receiving wastewater that is not subject to the provisions of this subpart for the purpose of eliminating cross ventilation to drains carrying affected wastewater are not required to have a flexible cap or extended subsurface discharging pipe.)

(ii) Each junction box shall be equipped with a tightly fitting solid cover (i.e., no visible gaps, cracks,



or holes) which shall be kept in place at all times except during inspection and maintenance. If the junction box is vented, the owner or operator shall comply with the requirements in paragraph (e)(4)(ii)(A) or (B) of this section.

(A) The junction box shall be vented to a process or through a closed-vent system to a control device. The closed-vent system shall be inspected in accordance with the requirements of § 63.1258(h) and the control device shall be designed, operated, and inspected in accordance with the requirements of paragraph (h) of this section.

(B) If the junction box is filled and emptied by gravity flow (i.e., there is no pump) or is operated with no more than slight fluctuations in the liquid level, the owner or operator may vent the junction box to the atmosphere provided that the junction box complies with the requirements in paragraphs (e)(4)(ii)(B)(1) and (2) of this section.

(1) The vent pipe shall be at least 90 centimeters in length and no greater than 10.2 centimeters in nominal inside diameter.

(2) Water seals shall be installed and maintained at the wastewater entrance(s) to or exit from the junction box restricting ventilation in the individual drain system and between components in the individual drain system. The

owner or operator shall demonstrate (e.g., by visual inspection or smoke test) upon request by the Administrator that the junction box water seal is properly designed and restricts ventilation.

(iii) Each sewer line shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visible gaps or cracks in joints, seals, or other emission interfaces. *(Note: This provision applies to sewers located inside and outside of buildings.)*

(5) Equipment used to comply with paragraphs (e)(4)(i), (ii), or (iii) of this section shall be inspected as follows:

(i) Each drain using a tightly fitting cap or plug shall be visually inspected initially, and semiannually thereafter, to ensure caps or plugs are in place and that there are no gaps, cracks, or other holes in the cap or plug.

(ii) Each junction box shall be visually inspected initially, and semiannually thereafter, to ensure that there are no gaps, cracks, or other holes in the cover.

(iii) The unburied portion of each sewer line shall be visually inspected initially, and semiannually thereafter, for indication of cracks or gaps that could result in air emissions.

(6) Except as provided in paragraph (i) of this section, when a gap, hole, or crack is identified in a joint or cover, first efforts at repair shall be made no later than 5 calendar days after identification, and repair shall be completed within 15 calendar days after identification.

(f) Oil-water separators. For each oil-water separator that receives, manages, or treats affected wastewater or a residual removed from affected wastewater, the owner or operator shall comply with the requirements of paragraphs (f)(1) through (6) of this section.

(1) The owner or operator shall maintain one of the following:

(i) A fixed roof and a closed-vent system that routes the organic HAP vapors vented from the oil-water separator to a control device. The fixed roof, closed-vent system, and control device shall meet the requirements specified in paragraph (f)(2) of this section;

(ii) A floating roof that meets the requirements in 40 CFR part 60, subpart QQQ §§ 60.693-2(a)(1)(i), (a)(1)(ii), (a)(2), (a)(3), and (a)(4). For portions of the oil-water separator where it is infeasible to construct and operate a floating roof, such as over the weir mechanism, the owner or operator shall operate and maintain a fixed roof, closed-vent system, and control device that meet the requirements specified in paragraph (f)(2) of this section.

(2) A fixed roof shall meet the requirements of paragraph (f)(2)(i) of this section, a control device shall meet the requirements of paragraph (f)(2)(ii) of this section, and a closed-vent system shall meet the requirements of (f)(2)(iii) of this section.

(i) The fixed roof shall meet the following requirements:

(A) Except as provided in (f)(2)(iv) of this section, the fixed roof and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be maintained in accordance with the requirements specified in § 63.1258(h).

(B) Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that the oil-water separator contains affected wastewater or a residual removed from affected wastewater except when it is necessary to use the opening for sampling or removal, or for equipment inspection, maintenance, or repair.

(ii) The control device shall be designed, operated, and inspected in accordance with the requirements of paragraph (h) of this section.

(iii) Except as provided in paragraph (f)(2)(iv) of this section, the closed-vent system shall be inspected in accordance with the requirements of § 63.1258(h).

(iv) For any fixed-roof and closed-vent system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements of § 63.1258(h).

(3) If the owner or operator elects to comply with the requirements of paragraph (f)(1)(ii) of this section, seal gaps shall be measured according to the procedures specified in 40 CFR part 60, subpart QQQ § 60.696(d)(1) and the schedule specified in paragraphs (f)(3)(i) and (ii) of this section.

(i) Measurement of primary seal gaps shall be performed within 60 calendar days after installation of the floating roof and introduction of affected wastewater or a residual removed from affected wastewater and once every 5 years thereafter.

(ii) Measurement of secondary seal gaps shall be performed within 60 calendar days after installation of the floating roof and introduction of affected wastewater or a residual removed from affected wastewater and once every year thereafter.

(4) Each oil-water separator shall be inspected initially, and semiannually thereafter, for improper work practices in accordance with § 63.1258(g). For oil-water separators, improper work practice includes, but is not

limited to, leaving open or ungasketed any access door or other opening when such door or opening is not in use.

(5) Each oil-water separator shall be inspected for control equipment failures as defined in paragraph (f)(5)(i) of this section according to the schedule specified in paragraphs (f)(5)(ii) and (iii) of this section.

(i) For oil-water separators, control equipment failure includes, but is not limited to, the conditions specified in paragraphs (f)(5)(i)(A) through (G) of this section.

(A) The floating roof is not resting on either the surface of the liquid or on the leg supports.

(B) There is stored liquid on the floating roof.

(C) A rim seal is detached from the floating roof.

(D) There are holes, tears, or other open spaces in the rim seal or seal fabric of the floating roof.

(E) There are gaps between the primary seal and the separator wall that exceed 67 square centimeters per meter of separator wall perimeter or the width of any portion of any gap between the primary seal and the separator wall exceeds 3.8 centimeters.

(F) There are gaps between the secondary seal and the separator wall that exceed 6.7 square centimeters per meter of separator wall perimeter or the width of any portion of

any gap between the secondary seal and the separator wall exceeds 1.3 centimeters.

(G) A gasket, joint, lid, cover, or door has a gap or crack, or is broken.

(ii) The owner or operator shall inspect for the control equipment failures in paragraphs (f)(5)(i)(A) through (F) according to the schedule specified in paragraph (f)(3) of this section.

(iii) The owner or operator shall inspect for control equipment failures in paragraph (f)(5)(i)(G) of this section initially, and semiannually thereafter.

(6) Except as provided in paragraph (i) of this section, when an improper work practice or a control equipment failure is identified, first efforts at repair shall be made no later than 5 calendar days after identification and repair shall be completed within 45 calendar days after identification.

(g) Performance standards for treatment processes managing wastewater and/or residuals removed from wastewater. This section specifies the performance standards for treating affected wastewater. The owner or operator shall comply with the requirements as specified in paragraphs (g)(1) through (6) of this section. Where multiple compliance options are provided, the options may be used in combination for different wastewater and/or for

different compounds (e.g., soluble versus partially soluble compounds) in the same wastewater, except where otherwise provided in this section. Once affected wastewater or a residual removed from affected wastewater has been treated in accordance with this subpart, it is no longer subject to the requirements of this subpart.

(1) Existing source. For a wastewater stream at an existing source that exceeds or is designated to exceed the concentration and load criteria in paragraph (a)(1)(i)(A) of this section, the owner or operator shall comply with a control option in paragraph (g)(8) of this section. For a wastewater stream at an existing source that exceeds the concentration and load criteria in either paragraph (a)(1)(i)(B) or (C) of this section, the owner or operator shall comply with a control option in paragraph (g)(8) of this section and a control option in paragraph (g)(9) of this section. As an alternative to the control options in paragraphs (g)(8) and (g)(9) of this section, the owner or operator may comply with a control option in either paragraph (g)(10), (11) or (13) of this section, as applicable.

(2) New source. For a wastewater stream at a new source that exceeds or is designated to exceed the concentration and load criteria in paragraph (a)(1)(i)(A) of this section, the owner or operator shall comply with a



control option in paragraph (g)(8) of this section. For wastewater at a new source that exceeds the concentration and load criteria in either paragraph (a)(1)(i)(B) or (C) of this section, but does not exceed the criteria in paragraph (a)(1)(i)(D) of this section, the owner or operator shall comply with a control option in paragraph (g)(8) of this section and a control option in paragraph (g)(9) of this section. As an alternative to the control options in paragraphs (g)(8) and/or (9) of this section, the owner or operator may comply with a control option in either paragraph (g)(10), (11), or (13) of this section, as applicable. For a wastewater stream at a new source that exceeds or is designated to exceed the concentration and load criteria in paragraph (a)(1)(i)(D) of this section, the owner or operator shall comply with a control option in paragraph (g)(12) or (13) of this section.

(3) Biological treatment processes. Biological treatment processes in compliance with this section may be either open or closed biological treatment processes as defined in § 63.1251. An open biological treatment process in compliance with this section need not be covered and vented to a control device. An open or a closed biological treatment process in compliance with this section and using § 63.1257(e)(2)(iii)(E) or (F) to demonstrate compliance is not subject to the requirements of paragraphs (b) and (c) of

this section. A closed biological treatment process in compliance with this section and using § 63.1257(e)(2)(iii)(G) to demonstrate compliance shall comply with the requirements of paragraphs (b) and (c) of this section. Waste management units upstream of an open or closed biological treatment process shall meet the requirements of paragraphs (b) through (f) of this section, as applicable.

(4) Performance tests and design evaluations. If the Resource Conservation and Recovery Act (RCRA) option [paragraph (g)(13) of this section] or the enhanced biological treatment process for soluble HAP compounds option [paragraph (g)(10) of this section] is selected to comply with this section, neither a design evaluation nor a performance test is required. For any other nonbiological treatment process, and for closed biological treatment processes as defined in § 63.1251, the owner or operator shall conduct either a design evaluation as specified in § 63.1257(e)(2)(ii) or performance test as specified in § 63.1257(e)(2)(iii). For each open biological treatment process as defined in § 63.1251, the owner or operator shall conduct a performance test as specified in § 63.1257(e)(2)(iii)(E) or (F).

(5) Control device requirements. When gases are vented from the treatment process, the owner or operator

shall comply with the applicable control device requirements specified in paragraph (h) of this section and § 63.1257(e)(3), and the applicable leak inspection provisions specified in § 63.1258(h). This requirement is in addition to the requirements for treatment systems specified in paragraphs (g)(8) through (14) of this section. This requirement does not apply to any open biological treatment process that meets the mass removal requirements.

(6) Residuals: general. When residuals result from treating affected wastewater, the owner or operator shall comply with the requirements for residuals specified in paragraph (g)(14) of this section.

(7) Treatment using a series of treatment processes. In all cases where the wastewater provisions in this subpart allow or require the use of a treatment process or control device to comply with emissions limitations, the owner or operator may use multiple treatment processes or control devices, respectively. For combinations of treatment processes where the wastewater stream is conveyed by hard-piping, the owner or operator shall comply with either the requirements of paragraph (g)(7)(i) or (ii) of this section. For combinations of treatment processes where the wastewater stream is not conveyed by hard-piping, the owner or operator shall comply with the requirements of paragraph (g)(7)(ii) of this section. For combinations of control devices, the

owner or operator shall comply with the requirements of paragraph (g)(7)(i) of this section.

(i) Compliance across the combination of all treatment units or control devices in series.

(A) For combinations of treatment processes, the wastewater stream shall be conveyed by hard-piping between the treatment processes. For combinations of control devices, the vented gas stream shall be conveyed by hard-piping between the control devices.

(B) For combinations of treatment processes, each treatment process shall meet the applicable requirements of paragraphs (b) through (f) of this section, except as provided in paragraph (g)(3) of this section.

(C) The owner or operator shall identify, and keep a record of, the combination of treatment processes or of control devices, including identification of the first and last treatment process or control device. The owner or operator shall include this information as part of the treatment process description reported in the Notification of Compliance Status.

(D) The performance test or design evaluation shall determine compliance across the combination of treatment processes or control devices. If a performance test is conducted, the "inlet" shall be the point at which the wastewater stream or residual enters the first treatment

process, or the vented gas stream enters the first control device. The "outlet" shall be the point at which the treated wastewater stream exits the last treatment process, or the vented gas stream exits the last control device.

(ii) Compliance across individual units.

(A) For combinations of treatment processes, each treatment process shall meet the applicable requirements of paragraphs (b) through (f) of this section except as provided in paragraph (g)(3) of this section.

(B) The owner or operator shall identify, and keep a record of, the combination of treatment processes, including identification of the first and last treatment process. The owner or operator shall include this information as part of the treatment process description reported in the Notification of Compliance Status report.

(C) The owner or operator shall determine the mass removed or destroyed by each treatment process. The performance test or design evaluation shall determine compliance for the combination of treatment processes by adding together the mass removed or destroyed by each treatment process and determine the overall control efficiency of the treatment system.

(8) Control options: Wastewater containing partially soluble HAP compounds. The owner or operator shall comply with either paragraph (g)(8)(i) or (ii) of this section for

the control of partially soluble HAP compounds at new or existing sources.

(i) 50 ppmw concentration option. The owner or operator shall comply with paragraphs (g)(8)(i)(A) and (B) of this section.

(A) Reduce, by removal or destruction, the concentration of total partially soluble HAP compounds to a level less than 50 ppmw as determined by the procedures specified in § 63.1257(e)(2)(iii)(B).

(B) This option shall not be used when the treatment process is a biological treatment process. This option shall not be used when the wastewater is designated as an affected wastewater as specified in paragraph (a)(1)(ii) of this section. Dilution shall not be used to achieve compliance with this option.

(ii) Percent mass removal/destruction option. The owner or operator shall reduce, by removal or destruction, the mass of total partially soluble HAP compounds by 99 percent or more. The removal destruction efficiency shall be determined by the procedures specified in § 63.1257(e)(2)(iii)(C), for noncombustion, nonbiological treatment processes; § 63.1257(e)(2)(iii)(D), for combustion processes; and § 63.1257(e)(2)(iii)(F) or (G) for biological treatment processes.

(9) Control options: Wastewater containing soluble HAP compounds. The owner or operator shall comply with either paragraph (g)(9)(i) or (ii) of this section for the control of soluble HAP compounds at new or existing sources.

(i) 520 ppmw concentration option. The owner or operator shall comply with paragraphs (g)(9)(i)(A) and (B) of this section.

(A) Reduce, by removal or destruction, the concentration of total soluble HAP compounds to a level less than 520 ppmw as determined in the procedures specified in § 63.1257(e)(2)(iii)(B).

(B) This option shall not be used when the treatment process is a biological treatment process. This option shall not be used when the wastewater is designated as an affected wastewater as specified in paragraph (a)(1)(ii) of this section. Dilution shall not be used to achieve compliance with this option.

(ii) Percent mass removal/destruction option. The owner or operator shall reduce, by removal or destruction, the mass of total soluble HAP by 90 percent or more. The removal/destruction efficiency shall be determined by the procedures in § 63.1257(e)(2)(iii)(C), for noncombustion, nonbiological treatment processes; § 63.1257(e)(2)(iii)(D), for combustion processes; and § 63.1257(e)(2)(iii)(F) or (G) for biological treatment processes.

(10) Control option: Enhanced biotreatment for wastewater containing soluble HAP. The owner or operator may elect to treat affected wastewater streams containing soluble HAP and less than 50 ppmw partially soluble HAP in an enhanced biological treatment system, as defined in § 63.1251. This option shall not be used when the wastewater is designated as an affected wastewater as specified in paragraph (a)(1)(ii) of this section. These treatment processes are exempt from the design evaluation or performance tests requirements specified in paragraph (g)(4) of this section.

(11) 95-percent mass reduction option, for biological treatment processes. The owner or operator of a new or existing source using biological treatment for any affected wastewater shall reduce the mass of total soluble and partially soluble HAP sent to that biological treatment unit by at least 95 percent. All wastewater as defined in §63.1251 entering such a biological treatment unit from PMPU's subject to this subpart shall be included in the demonstration of the 95-percent mass removal. The owner or operator shall comply with paragraphs (g)(11)(i) through (iv) of this section.

(i) Except as provided in paragraph (g)(11)(iv) of this section, the owner or operator shall ensure that all wastewater from PMPU's subject to this subpart entering a



biological treatment unit are treated to destroy at least 95-percent total mass of all soluble and partially soluble HAP compounds.

(ii) For open biological treatment processes, compliance shall be determined using the procedures specified in § 63.1257(e)(2)(iii)(E). For closed aerobic biological treatment processes compliance shall be determined using the procedures specified in § 63.1257(e)(2)(iii)(E) or (G). For closed anaerobic biological treatment processes compliance shall be determined using the procedures specified in § 63.1257(e)(2)(iii)(G).

(iii) For each treatment process or waste management unit that receives, manages, or treats wastewater subject to this paragraph, from the POD to the biological treatment unit, the owner or operator shall comply with paragraphs (b) through (f) of this section for control of air emissions. When complying with this paragraph, the term affected wastewater in paragraphs (b) through (f) of this section shall mean all wastewater from PMPU's, not just affected wastewater.

(iv) If wastewater is in compliance with the requirements in paragraph (g)(8), (9), or (12) of this section before entering the biological treatment unit, the hazardous air pollutants mass of that wastewater is not

required to be included in the total mass flow rate entering the biological treatment unit for the purpose of demonstrating compliance.

(12) Percent mass removal/destruction option for soluble HAP compounds at new sources. The owner or operator of a new source shall reduce, by removal or destruction, the mass flow rate of total soluble HAP from affected wastewater by 99 percent or more. The removal/destruction efficiency shall be determined by the procedures in § 63.1257(e)(2)(iii)(C), for noncombustion, nonbiological treatment processes; § 63.1257(e)(2)(iii)(D), for combustion processes; and § 63.1257(e)(2)(iii)(F) or (G) for biological treatment processes.

(13) Treatment in a RCRA unit option. The owner or operator shall treat the affected wastewater or residual in a unit identified in, and complying with, paragraph (g)(13)(i), (ii), or (iii) of this section. These units are exempt from the design evaluation or performance tests requirements specified in paragraph (g)(4) of this section and § 63.1257(e)(2), and from the monitoring requirements specified in paragraph (a)(2)(iii) of this section, as well as recordkeeping and reporting requirements associated with monitoring and performance tests.

(i) The wastewater or residual is discharged to a hazardous waste incinerator for which the owner or operator

has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 264, subpart O, or has certified compliance with the interim status requirements of 40 CFR part 265, subpart O;

(ii) The wastewater or residual is discharged to a process heater or boiler burning hazardous waste for which the owner or operator:

(A) Has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266, subpart H; or

(B) Has certified compliance with the interim status requirements of 40 CFR part 266, subpart H.

(iii) The wastewater or residual is discharged to an underground injection well for which the owner or operator has been issued a final permit under 40 CFR part 270 or 40 CFR part 144 and complies with the requirements of 40 CFR part 122. The owner or operator shall comply with all applicable requirements of this subpart prior to the point where the wastewater enters the underground portion of the injection well.

(14) Residuals. For each residual removed from affected wastewater, the owner or operator shall control for air emissions by complying with paragraphs (b) through (f) of this section and by complying with one of the provisions in paragraphs (g)(14)(i) through (iv) of this section.

(i) Recycle the residual to a production process or sell the residual for the purpose of recycling. Once a residual is returned to a production process, the residual is no longer subject to this section.

(ii) Return the residual to the treatment process.

(iii) Treat the residual to destroy the total combined mass flow rate of soluble and/or partially soluble HAP compounds by 99 percent or more, as determined by the procedures specified in § 63.1257(e)(2)(iii)(C) or (D).

(iv) Comply with the requirements for RCRA treatment options specified in paragraph (g)(13) of this section.

(h) Control devices. For each control device or combination of control devices used to comply with the provisions in paragraphs (b) through (f) and (g)(5) of this section, the owner or operator shall operate and maintain the control device or combination of control devices in accordance with the requirements of paragraphs (h)(1) through (4) of this section.

(1) Whenever organic HAP emissions are vented to a control device which is used to comply with the provisions of this subpart, such control device shall be operating.

(2) The control device shall be designed and operated in accordance with paragraph (h)(2)(i), (ii), (iii), (iv), or (v) of this section, as demonstrated by the provisions in § 63.1257(e)(3).

(i) An enclosed combustion device (including but not limited to a vapor incinerator, boiler, or process heater) shall meet the conditions in paragraph (h)(2)(i)(A), (B), or (C) of this section, alone or in combination with other control devices. If a boiler or process heater is used as the control device, then the vent stream shall be introduced into the flame zone of the boiler or process heater.

(A) Reduce the organic HAP emissions vented to the control device by 95 percent by weight or greater;

(B) Achieve an outlet TOC concentration of 20 ppmv on a dry basis corrected to 3 percent oxygen. The owner or operator shall use either Method 18 of 40 CFR part 60, appendix A, or any other method or data that has been validated according to the applicable procedures in Method 301 of appendix A of this part; or

(C) Provide a minimum residence time of 0.5 seconds at a minimum temperature of 760°C.

(ii) A vapor recovery system (including but not limited to a carbon adsorption system or condenser), alone or in combination with other control devices, shall reduce the organic HAP emissions vented to the control device by 95 percent by weight or greater or achieve an outlet TOC concentration of 20 ppmv. The 20 ppmv performance standard is not applicable to compliance with the provisions of paragraphs (c) or (d) of this section.

(iii) A flare shall comply with the requirements of § 63.11(b).

(iv) A scrubber, alone or in combination with other control devices, shall reduce the organic HAP emissions in such a manner that 95 weight-percent is either removed, or destroyed by chemical reaction with the scrubbing liquid, or achieve an outlet TOC concentration of 20 ppmv. The 20 ppmv performance standard is not applicable to compliance with the provisions of paragraphs (c) or (d) of this section.

(v) Any other control device used shall, alone or in combination with other control devices, reduce the organic HAP emissions vented to the control device by 95 percent by weight or greater or achieve an outlet TOC concentration of 20 ppmv. The 20 ppmv performance standard is not applicable to compliance with the provisions of paragraphs (c) or (d) of this section.

(3) If the control device is a combustion device, the owner or operator shall comply with the requirements in § 63.1252(g) to control halogenated vent streams.

(4) Except as provided in paragraph (i) of this section, if gaps, cracks, tears, or holes are observed in ductwork, piping, or connections to covers and control devices during an inspection, a first effort to repair shall be made as soon as practical but no later than 5 calendar days after identification. Repair shall be completed no

later than 15 calendar days after identification or discovery of the defect.

(i) Delay of repair. Delay of repair of equipment for which a control equipment failure or a gap, crack, tear, or hole has been identified, is allowed if the repair is technically infeasible without a shutdown, as defined in § 63.1251, or if the owner or operator determines that emissions of purged material from immediate repair would be greater than the emissions likely to result from delay of repair. Repair of this equipment shall occur by the end of the next shutdown.

(1) Delay of repair of equipment for which a control equipment failure or a gap, crack, tear, or hole has been identified, is allowed if the equipment is emptied or is no longer used to treat or manage affected wastewater or residuals removed from affected wastewater.

(2) Delay of repair of equipment for which a control equipment failure or a gap, crack, tear, or hole has been identified is also allowed if additional time is necessary due to the unavailability of parts beyond the control of the owner or operator. Repair shall be completed as soon as practical. The owner or operator who uses this provision shall comply with the requirements of § 63.1259(h) to document the reasons that the delay of repair was necessary.

§ 63.1257 Test methods and compliance procedures.

(a) General. Except as specified in paragraph (a)(5) of this section, the procedures specified in paragraphs (c), (d), (e), and (f) of this section are required to demonstrate initial compliance with §§ 63.1253, 63.1254, 63.1256, and 63.1252(e), respectively. The provisions in paragraphs (a)(2) through (3) apply to performance tests that are specified in paragraphs (c), (d), and (e) of this section. The provisions in paragraph (a)(5) of this section are used to demonstrate initial compliance with the alternative standards specified in §§ 63.1253(d) and 63.1254(c). The provisions in paragraph (a)(6) of this section are used to comply with the outlet concentration requirements specified in §§ 63.1253(c), 63.1254(a)(2)(i) and (a)(3)(ii)(B), 63.1254(b)(i) and 63.1256(h)(2).

(1) Design evaluation. To demonstrate that a control device meets the required control efficiency, a design evaluation must address the composition and organic HAP concentration of the vent stream entering the control device. A design evaluation also must address other vent stream characteristics and control device operating parameters as specified in any one of paragraphs (a)(1)(i) through (vi) of this section, depending on the type of control device that is used. If the vent stream is not the only inlet to the control device, the efficiency demonstration also must consider all other vapors, gases,



and liquids, other than fuels, received by the control device.

(i) For an enclosed combustion device used to comply with the provisions of 63.1253(b)(2) or (c)(2), or 63.1256(h)(2)(i)(C) with a minimum residence time of 0.5 seconds and a minimum temperature of 760°C, the design evaluation must document that these conditions exist.

(ii) For a combustion control device that does not satisfy the criteria in paragraph (a)(1)(i), the design evaluation must document control efficiency and address the following characteristics, depending on the type of control device:

(A) For a thermal vapor incinerator, the design evaluation must consider the autoignition temperature of the organic HAP, must consider the vent stream flow rate, and must establish the design minimum and average temperature in the combustion zone and the combustion zone residence time.

(B) For a catalytic vapor incinerator, the design evaluation shall consider the vent stream flow rate and shall establish the design minimum and average temperatures across the catalyst bed inlet and outlet.

(C) For a boiler or process heater, the design evaluation shall consider the vent stream flow rate; shall establish the design minimum and average flame zone temperatures and combustion zone residence time; and shall

describe the method and location where the vent stream is introduced into the flame zone.

(iii) For a condenser, the design evaluation shall consider the vent stream flow rate, relative humidity, and temperature and shall establish the design outlet organic HAP compound concentration level, design average temperature of the condenser exhaust vent stream, and the design average temperatures of the coolant fluid at the condenser inlet and outlet. The temperature of the gas stream exiting the condenser must be measured and used to establish the outlet organic HAP concentration.

(iv) For a carbon adsorption system that regenerates the carbon bed directly onsite in the control device such as a fixed-bed adsorber, the design evaluation shall consider the vent stream flow rate, relative humidity, and temperature and shall establish the design exhaust vent stream organic compound concentration level, adsorption cycle time, number and capacity of carbon beds, type and working capacity of activated carbon used for carbon beds, design total regeneration stream mass or volumetric flow over the period of each complete carbon bed regeneration cycle, design carbon bed temperature after regeneration, design carbon bed regeneration time, and design service life of carbon. For vacuum desorption, the pressure drop shall be included.

(v) For a carbon adsorption system that does not regenerate the carbon bed directly onsite in the control device such as a carbon canister, the design evaluation shall consider the vent stream mass or volumetric flow rate, relative humidity, and temperature and shall establish the design exhaust vent stream organic compound concentration level, capacity of carbon bed, type and working capacity of activated carbon used for carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control device and source operating schedule.

(vi) For a scrubber, the design evaluation shall consider the vent stream composition; constituent concentrations; liquid-to-vapor ratio; scrubbing liquid flow rate and concentration; temperature; and the reaction kinetics of the constituents with the scrubbing liquid. The design evaluation shall establish the design exhaust vent stream organic compound concentration level and will include the additional information in paragraphs (a)(1)(vi)(A) and (B) of this section for trays and a packed column scrubber.

(A) Type and total number of theoretical and actual trays;

(B) Type and total surface area of packing for entire column, and for individual packed sections if column contains more than one packed section.

(2) Calculation of TOC or total organic HAP concentration. The TOC concentration or total organic HAP concentration is the sum of the concentrations of the individual components. If compliance is being determined based on TOC, the owner or operator shall compute TOC for each run using Equation 3 of this subpart. If compliance with the wastewater provisions is being determined based on total organic HAP, the owner or operator shall compute total organic HAP using Equation 3 of this subpart, except that only the organic HAP compounds shall be summed; when determining compliance with paragraph (e)(3)(i) of this section, only the soluble and partially soluble HAP compounds shall be summed.

$$CG_T = \frac{1}{m} \sum_{j=1}^m \left( \sum_{i=1}^n CGS_{i,j} \right) \quad (\text{Eq. 3})$$

where:

$CG_T$  = total concentration of TOC in vented gas stream, average of samples, dry basis, ppmv  
 $CGS_{i,j}$  = concentration of sample components in vented gas stream for sample j, dry basis, ppmv  
*i* = identifier for a compound  
*n* = number of components in the sample  
*j* = identifier for a sample  
*m* = number of samples in the sample run

(3) Percent oxygen correction for combustion control devices. If the control device is a combustion device, the TOC or total organic HAP concentrations must be corrected to 3 percent oxygen. The integrated sampling and analysis procedures of Method 3B of 40 CFR part 60, appendix A shall be used to determine the actual oxygen concentration (%O<sub>2d</sub>). The samples shall be taken during the same time that the TOC or total organic HAP samples are taken. The concentration corrected to 3 percent oxygen (C<sub>d</sub>) shall be computed using Equation 4 of this subpart:

$$C_c = C_m \left( \frac{17.9}{20.9 - \%O_{2d}} \right) \quad (\text{Eq. 4})$$

where:

C<sub>c</sub> = concentration of TOC or total organic HAP  
corrected to 3 percent oxygen, dry basis, ppmv

C<sub>m</sub> = total concentration of TOC in vented gas stream,  
average of samples, dry basis, ppmv

%O<sub>2d</sub> = concentration of oxygen measured in vented gas  
stream, dry basis, percent by volume

(4) Exemptions from compliance demonstrations. An owner or operator using any control device specified in paragraphs (a)(4)(i) through (iv) of this section is exempt from the initial compliance provisions in paragraphs (c), (d), and (e) of this section.

(i) A boiler or process heater with a design heat input capacity of 44 megawatts or greater.

(ii) A boiler or process heater into which the emission stream is introduced with the primary fuel.

(iii) A boiler or process heater burning hazardous waste for which the owner or operator:

(A) Has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266, subpart H, or

(B) Has certified compliance with the interim status requirements of 40 CFR part 266, subpart H.

(iv) A hazardous waste incinerator for which the owner or operator has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 264, subpart O, or has certified compliance with the interim status requirements of 40 CFR part 265, subpart O.

(5) Initial compliance with alternative standard.

Initial compliance with the alternative standards in §§ 63.1253(d) and 63.1254(c) is demonstrated when the outlet TOC concentration is 20 ppmv or less, and the outlet hydrogen halide and halogen concentration is 20 ppmv or less. To demonstrate initial compliance, the owner or operator shall be in compliance with the monitoring provisions in § 63.1258(b)(5) on the initial compliance date. The owner or operator shall use Method 18 to

determine the predominant organic HAP in the emission stream if the TOC monitor is calibrated on the predominant HAP.

(6) Initial compliance with the 20 ppmv outlet limit.

Initial compliance with the 20 ppmv TOC and hydrogen halide and halogen concentration is demonstrated when the outlet TOC concentration is 20 ppmv or less, and the outlet hydrogen halide and halogen concentration is 20 ppmv or less. To demonstrate initial compliance, the operator shall use test methods described in paragraph (b) of this section. The owner or operator shall comply with the monitoring provisions in § 63.1258(b)(1) through (5) of this subpart on the initial compliance date.

(b) Test methods. When testing is conducted to measure emissions from an affected source, the test methods specified in paragraphs (b)(1) through (10) of this section shall be used.

(1) EPA Method 1 or 1A of appendix A of part 60 is used for sample and velocity traverses.

(2) EPA Method 2, 2A, 2C, or 2D of appendix A of part 60 is used for velocity and volumetric flow rates.

(3) EPA Method 3 of appendix A of part 60 is used for gas analysis.

(4) EPA Method 4 of appendix A of part 60 is used for stack gas moisture.

(5) Reserved.

(6) Concentration measurements shall be adjusted to negate the dilution effects of introducing nonaffected gaseous streams into the vent streams prior to control or measurement. The following methods are specified for concentration measurements:

(i) Method 18 may be used to determine HAP concentration in any control device efficiency determination.

(ii) Method 25 of appendix A of part 60 may be used to determine total gaseous nonmethane organic concentration for control efficiency determinations in combustion devices.

(iii) Method 26 of appendix A of part 60 shall be used to determine hydrogen chloride concentrations in control device efficiency determinations or in the 20 ppmv outlet hydrogen halide concentration standard.

(iv) Method 25A of appendix A of part 60 may be used to determine the HAP or TOC concentration for control device efficiency determinations under the conditions specified in Method 25 of appendix A for direct measurement of an effluent with a flame ionization detector, or in demonstrating compliance with the 20 ppmv TOC outlet standard. If Method 25A is used to determine the concentration of TOC for the 20 ppmv standard, the instrument shall be calibrated on methane or the predominant HAP. If calibrating on the predominant HAP, the use of



Method 25A shall comply with paragraphs (b)(6)(iv)(A) through (C) of this section.

(A) The organic HAP used as the calibration gas for Method 25A, 40 CFR part 60, appendix A, shall be the single organic HAP representing the largest percent by volume.

(B) The use of Method 25A, 40 CFR part 60, appendix A, is acceptable if the response from the high level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(C) The span value of the analyzer must be less than 100 ppmv.

(7) Testing conditions for continuous processes.

Testing of emissions on equipment operating as part of a continuous process will consist of three 1-hour runs. Gas stream volumetric flow rates shall be measured every 15 minutes during each 1-hour run. The HAP concentration shall be determined from samples collected in an integrated sample over the duration of each 1-hour test run, or from grab samples collected simultaneously with the flow rate measurements (every 15 minutes). If an integrated sample is collected for laboratory analysis, the sampling rate shall be adjusted proportionally to reflect variations in flow rate. For continuous gas streams, the emission rate used to

determine compliance shall be the average emission rate of the three test runs.

(8) Testing and compliance determination conditions for batch processes. Testing of emissions on equipment where the flow of gaseous emissions is intermittent (batch operations) shall be conducted as specified in paragraphs (b)(8)(i) through (iii) of this section.

(i) Except as provided in paragraph (b)(9) of this section for condensers, testing shall be conducted at absolute worst-case conditions or hypothetical worst-case conditions. Gas stream volumetric flow rates shall be measured at 15-minute intervals. The HAP or TOC concentration shall be determined from samples collected in an integrated sample over the duration of the test, or from grab samples collected simultaneously with the flow rate measurements (every 15 minutes). If an integrated sample is collected for laboratory analysis, the sampling rate shall be adjusted proportionally to reflect variations in flow rate. The absolute worst-case or hypothetical worst-case conditions shall be characterized by the criteria presented in paragraphs (b)(8)(i)(A) and (B) of this section. In all cases, a site-specific plan shall be submitted to the Administrator for approval prior to testing in accordance with § 63.7(c) and § 63.1260(1). The test plan shall

include the emission profile described in paragraph (b)(8)(ii) of this section.

(A) Absolute worst-case conditions are defined by the criteria presented in paragraph (b)(8)(i)(A)(1) or (2) of this section if the maximum load is the most challenging condition for the control device. Otherwise, absolute worst-case conditions are defined by the conditions in paragraph (b)(8)(i)(A)(3) of this section.

(1) The period in which the inlet to the control device will contain at least 50 percent of the maximum HAP load (in lb) capable of being vented to the control device over any 8 hour period. An emission profile as described in paragraph (b)(8)(ii)(A) of this section shall be used to identify the 8-hour period that includes the maximum projected HAP load.

(2) A 1-hour period of time in which the inlet to the control device will contain the highest HAP mass loading rate, in lb/hr, capable of being vented to the control device. An emission profile as described in paragraph (b)(8)(ii)(A) of this section shall be used to identify the 1-hour period of maximum HAP loading.

(3) The period of time when the HAP loading or stream composition (including non-HAP) is most challenging for the control device. These conditions include, but are not limited to the following:

(i) Periods when the stream contains the highest combined VOC and HAP load, in lb/hr, described by the emission profiles in (b)(8)(ii);

(ii) Periods when the streams contain HAP constituents that approach limits of solubility for scrubbing media;

(iii) Periods when the streams contain HAP constituents that approach limits of adsorptivity for carbon adsorption systems.

(B) Hypothetical worst-case conditions are simulated test conditions that, at a minimum, contain the highest hourly HAP load of emissions that would be predicted to be vented to the control device from the emissions profile described in paragraph (b)(8)(ii)(B) or (C) of this section.

(ii) Emissions profile. The owner or operator may choose to perform tests only during those periods of the worst-case conditions that the owner or operator selects to control as part of achieving the required emission reduction. The owner or operator must develop an emission profile for the vent to the control device that describes the characteristics of the vent stream at the inlet to the control device under worst case conditions. The emission profile shall be developed based on any one of the procedures described in (b)(8)(ii)(A) through (C) of this section, as required by paragraph (b)(8)(i).

(A) Emission profile by process. The emission profile must consider all emission episodes that could contribute to the vent stack for a period of time that is sufficient to include all processes venting to the stack and shall consider production scheduling. The profile shall describe the HAP load to the device that equals the highest sum of emissions from the episodes that can vent to the control device in any given hour. Emissions per episode shall be calculated using the procedures specified in paragraph (d)(2) of this section. Emissions per episode shall be divided by the duration of the episode only if the duration of the episode is longer than 1 hour.

(B) Emission profile by equipment. The emission profile must consist of emissions that meet or exceed the highest emissions, in lb/hr, that would be expected under actual processing conditions. The profile shall describe equipment configurations used to generate the emission events, volatility of materials processed in the equipment, and the rationale used to identify and characterize the emission events. The emissions may be based on using a compound more volatile than compounds actually used in the process(es), and the emissions may be generated from all equipment in the process(es) or only selected equipment.

(C) Emission profile by capture and control device limitation. The emission profile shall consider the capture

and control system limitations and the highest emissions, in lb/hr, that can be routed to the control device, based on maximum flowrate and concentrations possible because of limitations on conveyance and control equipment (e.g., fans, LEL alarms and safety bypasses).

(iii) Three runs, at a minimum of 1 hour each and a maximum of 8 hours each, are required for performance testing. Each run must occur over the same worst-case conditions, as defined in paragraph (b)(8)(i) of this section.

(9) Testing requirements for condensers. For emission streams controlled using condensers, continuous direct measurement of condenser outlet gas temperature to be used in determining concentrations per the design evaluation described in 63.1257(a)(1)(iii) is required.

(10) Wastewater testing. Wastewater analysis shall be conducted in accordance with paragraph (b)(10)(i), (ii), (iii), or (iv) of this section.

(i) Method 305. Use procedures specified in Method 305 of 40 CFR part 63, appendix A and comply with requirements specified in paragraph (b)(10)(v) of this section.

(ii) Method 624, 625, 1624, 1625, or 8270. Use procedures specified in Method 624, 625, 1624, 1625, or 8270

of 40 CFR part 136, appendix A and comply with requirements in paragraph (b)(10)(v) of this section.

(iii) Other EPA Methods. Use procedures specified in the method, validate the method using the procedures in paragraph (b)(10)(iii)(A) or (B) of this section, and comply with the procedures in paragraph (b)(10)(v) of this section.

(A) Validate the method according to section 5.1 or 5.3 of Method 301 of 40 CFR part 63, appendix A.

(B) Follow the procedure as specified in "Alternative Validation Procedure for EPA Waste Methods" 40 CFR part 63, appendix D.

(iv) Methods other than an EPA method. Use procedures specified in the method, validate the method using the procedures in paragraph (b)(10)(iii)(A) of this section, and comply with the requirements in paragraph (b)(10)(v) of this section.

(v) Sampling plan. The owner or operator shall prepare a sampling plan. Wastewater samples shall be collected using sampling procedures which minimize loss of organic compounds during sample collection and analysis and maintain sample integrity. The sample plan shall include procedures for determining recovery efficiency of the relevant partially soluble and soluble HAP compounds. An example of an acceptable sampling plan would be one that incorporates similar sampling and sample handling

requirements to those of Method 25D of 40 CFR part 60, appendix A. The sampling plan shall be maintained at the facility.

(c) Initial compliance with storage tank provisions.

The owner or operator of an affected storage tank shall demonstrate initial compliance with § 63.1253(b) or (c), as applicable, by fulfilling the requirements of paragraph (c)(1), or (c)(2), or (c)(3) of this section.

(1) Performance test. If this option is chosen to demonstrate initial compliance with the percent reduction requirement of § 63.1253(b)(1) or (c)(1)(i), the efficiency of the control device shall be calculated using performance test data as specified in paragraphs (c)(1)(i) through (iii) of this section. Initial compliance with the outlet concentration requirement of § 63.1253(b)(2) or (c)(1)(ii) is demonstrated by fulfilling the requirements of paragraph (a)(6) of this section.

(i) Equations 5 and 6 of this subpart shall be used to calculate the mass rate of total HAP reasonably expected maximum filling rate at the inlet and outlet of the control device for standard conditions of 20°C:

$$E_i = K_2 \left( \sum_{j=1}^n C_{ij} M_{ij} \right) Q_i \quad (\text{Eq. 5})$$

$$E_o = K_2 \left( \sum_{j=1}^n C_{oj} M_{oj} \right) Q_o \quad (\text{Eq. 6})$$



where:

$C_{ij}$ ,  $C_{oj}$  = concentration of sample component  $j$  of the gas stream at the inlet and outlet of the control device, respectively, dry basis, ppmv

$E_i$ ,  $E_o$  = mass rate of total HAP at the inlet and outlet of the control device, respectively, dry basis, kg/hr

$M_{ij}$ ,  $M_{oj}$  = molecular weight of sample component  $j$  of the gas stream at the inlet and outlet of the control device, respectively, gram/gram-mole

$Q_i$ ,  $Q_o$  = flow rate of gas stream at the inlet and outlet of the control device, respectively, dry standard cubic meter per minute

$K_2$  = constant,  $2.494 \times 10^{-6}$  (parts per million)<sup>-1</sup>  
(gram-mole per standard cubic meter)  
(kilogram/gram) (minute/hour), where standard temperature is 20°C

$n$  = number of sample components in the gas stream

(ii) The percent reduction in total HAP shall be calculated using Equation 7 of this subpart:

$$R = \frac{E_i - E_o}{E_i} (100) \quad (\text{Eq. 7})$$

where:

$R$  = control efficiency of control device, percent

$E_i$  = mass rate of total HAP at the inlet to the control device as calculated under paragraph (c)(1)(i) of this section, kilograms organic HAP per hour

$E_o$  = mass rate of total HAP at the outlet of the control device, as calculated under paragraph (c)(1)(i) of this section, kilograms organic HAP per hour

(iii) A performance test is not required to be conducted if the control device used to comply with § 63.1253 (storage tank provisions) is also used to comply with § 63.1254 (process vent provisions), and compliance with § 63.1254 has been demonstrated in accordance with paragraph (d) of this section.

(2) Design evaluation. If this option is chosen to demonstrate initial compliance with the percent reduction requirement of § 63.1253(b) or (c), a design evaluation shall be prepared in accordance with the provisions in paragraph (a)(1) of this section. The design evaluation shall include documentation demonstrating that the control device being used achieves the required control efficiency during reasonably expected maximum filling rate.

(3) Floating roof. If the owner or operator of an affected source chooses to comply with the provisions of § 63.1253(b) or (c) by installing a floating roof, the owner or operator shall comply with the procedures described in

§§ 63.119(b), (c), (d), and 63.120(a), (b), and (c), with the differences noted in paragraphs (c)(3)(i) through (v) of this section for the purposes of this subpart.

(i) When the term "storage vessel" is used in §§ 63.119 and 63.120, the definition of "storage tank" in § 63.1251 shall apply for the purposes of this subpart.

(ii) When December 31, 1992 is referred to in § 63.119, April 2, 1997 shall apply instead for the purposes of this subpart.

(iii) When April 22, 1994 is referred to in § 63.119, [INSERT DATE OF PUBLICATION OF THIS FINAL RULE IN THE FEDERAL REGISTER] shall apply instead for the purposes of this subpart.

(iv) When the phrase "the compliance date specified in § 63.100 of subpart F of this part" is referred to in § 63.120, the phrase "the compliance date specified in § 63.1250" shall apply for the purposes of this subpart.

(v) When the phrase "the maximum true vapor pressure of the total organic HAP's in the stored liquid falls below the values defining Group 1 storage vessels specified in table 5 or table 6 of this subpart" is referred to in § 63.120(b)(1)(iv), the phrase "the maximum true vapor pressure of the total organic HAP in the stored liquid falls below 13.1 kPa (1.9 psia)" shall apply for the purposes of this subpart.

(4) Initial compliance with alternative standard.

Initial compliance with § 63.1253(d) is demonstrated by fulfilling the requirements of paragraph (a)(5) of this section.

(5) Planned maintenance. The owner or operator shall demonstrate compliance with the requirements of § 63.1253(e) by including the periods of planned routine maintenance specified by date and time in each Periodic Report required by § 63.1260.

(d) Initial compliance with process vent provisions.

An owner or operator of an affected source complying with the process vent standards in § 63.1254 shall demonstrate compliance using the procedures described in paragraphs (d)(1) through (4) of this section.

(1) Except as provided in paragraph (a)(4) of this section, initial compliance with the process vent standards in § 63.1254 shall be demonstrated using the procedures specified in paragraphs (d)(1)(i) through (iv), as applicable.

(i) Initial compliance with § 63.1254(a)(1)(i) is demonstrated when the actual emissions of HAP from the sum of all process vents within a process that do not meet the criteria specified in § 63.1254(a)(3) is less than or equal to 2,000 lb/yr. Initial compliance with § 63.1254(a)(1)(ii) is demonstrated when the uncontrolled emissions of HAP from

the sum of all process vents within a process is less than or equal to 100 lb/yr. Uncontrolled HAP emissions and controlled HAP emissions shall be determined using the procedures described in paragraphs (d)(2) and (3) of this section.

(ii) Initial compliance with the percent reduction requirements in §§ 63.1254(a)(2), (a)(3), and (b) is demonstrated by:

(A) Determining controlled HAP emissions using the procedures described in paragraph (d)(3) of this section and uncontrolled HAP emissions determined using the procedures described in paragraph (d)(2) of this section and demonstrating that the reductions required by §§ 63.1254(a)(2), (a)(3), and (b) are met; or

(B) Controlling the process vents using a device meeting the criteria specified in paragraph (a)(4) of this section.

(iii) Initial compliance with the outlet concentration requirements in § 63.1254(a)(2)(ii) and (3) is demonstrated when the outlet TOC concentration is 20 ppmv or less and the outlet hydrogen halide and halogen concentration is 20 ppmv or less. The owner or operator shall demonstrate compliance by fulfilling the requirements in paragraph (a)(6) of this section.

(iv) Initial compliance with § 63.1254(c) is demonstrated by fulfilling the requirements of paragraph (a)(5) of this section.

(2) Uncontrolled emissions. An owner or operator of an affected source complying with the emission limitation required by § 63.1254(a)(1), or emissions reductions specified in § 63.1254(a)(2), (a)(3), or (b), for each process vent within a process, shall calculate uncontrolled emissions from all equipment in the process according to the procedures described in paragraph (d)(2)(i) or (ii) of this section, as appropriate.

(i) Emission estimation procedures. Owners or operators shall determine uncontrolled emissions of HAP using measurements and/or calculations for each batch emission episode within each unit operation according to the engineering evaluation methodology in paragraphs (d)(2)(i)(A) through (H) of this section. Except where variations are noted, individual HAP partial pressures in multicomponent systems shall be determined by the following methods: If the components are miscible in one another, use Raoult's law to calculate the partial pressures; if the solution is a dilute aqueous mixture, use Henry's law to calculate partial pressures; if Raoult's law or Henry's law are not appropriate or available, use experimentally obtained activity coefficients or models such

as the group-contribution models, to predict activity coefficients, or assume the components of the system behave independently and use the summation of all vapor pressures from the HAP as the total HAP partial pressure. Chemical property data can be obtained from standard reference texts.

(A) Vapor displacement. Emissions from vapor displacement due to transfer of material shall be calculated using Equation (8) of this subpart. The individual HAP partial pressures may be calculated using Raoult's law.

$$E = \frac{(V)}{(R)(T)} \times \sum_{i=1}^n (P_i)(MW_i) \quad (\text{Eq. 8})$$

where:

E = mass of HAP emitted

V = volume of gas displaced from the vessel

R = ideal gas law constant

T = temperature of the vessel vapor space; absolute

$P_i$  = partial pressure of the individual HAP

$MW_i$  = molecular weight of the individual HAP

n = number of HAP compounds in the emission stream

i = identifier for a HAP compound

(B) Purging. Emissions from purging shall be calculated using Equation 9 of this subpart. The partial pressures of individual condensable compounds may be calculated using Raoult's law, the pressure of the vessel vapor space may be set equal to 760 mmHg, and the partial

pressure of HAP shall be assumed to be 25 percent of the saturated value if the purge flow rate is greater than 100 standard cubic feet per minute (scfm).

$$E = \sum_{i=1}^n P_i MW_i \times \frac{(V)(t)}{(R)(T)} \times \frac{P_T}{P_T - \sum_{j=1}^m (P_j)} \quad (\text{Eq. 9})$$

where:

E = mass of HAP emitted

V = purge flow rate at the temperature and pressure of the vessel vapor space

R = ideal gas law constant

T = temperature of the vessel vapor space; absolute

$P_i$  = partial pressure of the individual HAP

$P_j$  = partial pressure of individual condensable VOC compounds (including HAP)

$P_T$  = pressure of the vessel vapor space

$MW_i$  = molecular weight of the individual HAP

t = time of purge

n = number of HAP compounds in the emission stream

i = identifier for a HAP compound

j = identifier for a condensable compound

m = number of condensable compounds (including HAP) in the emission stream

(C) Heating. Emissions caused by the heating of a vessel to a temperature equal to or lower than 10 K below



the boiling point shall be calculated using the procedures in either paragraph (d)(2)(i)(C)(1) or (3) of this section. Emissions caused by heating a vessel to a temperature that is higher than 10 K below the boiling point and less than the boiling point, must be calculated using the procedures in either paragraph (d)(2)(i)(C)(2) or (3) of this section. If the contents of a vessel are heated to the boiling point, emissions must be calculated using the procedures in paragraph (d)(2)(i)(C)(4) of this section.

(1) This paragraph describes procedures to calculate emissions if the final temperature to which the vessel contents are heated is 10 K below the boiling point of the HAP in the vessel, or lower. The owner or operator shall calculate the mass of HAP emitted per episode using either Equation 10 or 11 of this subpart. The moles of noncondensable gas displaced are calculated using Equation 12 of this subpart. The initial and final pressure of the noncondensable gas in the vessel shall be calculated using Equation 13 of this subpart. The average molecular weight of HAP in the displaced gas shall be calculated using Equation 14 of this subpart.

$$E = \frac{\sum_{i=1}^n ((P_i^*)(x_i))}{760 - \sum_{j=1}^m ((P_j^*)(x_j))} \times 10 \times MW_{HAP} \quad (\text{Eq. 10})$$

$$E = \frac{\frac{\sum_{i=1}^n (P_i)_{T_1}}{Pa_1} + \frac{\sum_{i=1}^n (P_i)_{T_2}}{Pa_2}}{2} \times \Delta T \times MW_{HAP} \quad (\text{Eq. 11})$$

$$\Delta T = \frac{V}{R} \left[ \left( \frac{Pa_1}{T_1} \right) - \left( \frac{Pa_2}{T_2} \right) \right] \quad (\text{Eq. 12})$$

$$Pa_n = P_{atm} - \sum_{j=1}^m (P_j)_{Tn} \quad (\text{Eq. 13})$$

$$MW_{HAP} = \sum_{i=1}^n \frac{\left( (P_i)_{T_1} + (P_i)_{T_2} \right) MW_i}{\sum_{i=1}^n \left( (P_i)_{T_1} + (P_i)_{T_2} \right)} \quad (\text{Eq. 14})$$

where:

$E$  = mass of HAP vapor displaced from the vessel  
being heated

$x_i$  = mole fraction of each HAP in the liquid phase

$x_j$  = mole fraction of each condensable VOC (including  
HAP) in the liquid phase

$(P_i^*)$  = vapor pressure of each HAP in the vessel  
headspace at any temperature between the initial  
and final heatup temperatures, mmHg

$(P_j^*)$  = vapor pressure of each condensable VOC  
(including HAP) in the vessel headspace at any

temperature between the initial and final heatup  
temperatures, mmHg

760 = atmospheric pressure, mmHg

$MW_{HAP}$  = the average molecular weight of HAP present in  
the displaced gas

$\Delta n$  = number of moles of noncondensable gas displaced

V = volume of free space in the vessel

R = ideal gas law constant

$T_1$  = initial temperature of vessel contents, absolute

$T_2$  = final temperature of vessel contents, absolute

$P_{a_n}$  = partial pressure of noncondensable gas in the  
vessel headspace at initial (n=1) and final  
(n=2) temperature

$P_{atm}$  = atmospheric pressure (when  $\Delta n$  is used in  
Equation 10 of this subpart,  $P_{atm}$  may be set  
equal to 760 mmHg for any vessel)

$(P_j)_{Tn}$  = partial pressure of each condensable compound  
(including HAP) in the vessel headspace at the  
initial temperature (n=1) and final (n=2)  
temperature

m = number of condensable compounds (including HAP)  
in the displaced vapor

j = identifier for a condensable compound

$(P_i)_{Tn}$  = partial pressure of each HAP in the vessel  
headspace at initial ( $T_1$ ) and final ( $T_2$ )

temperature; [for use in Equation 10, replace  $(P_i)_{T_1} + (P_i)_{T_2}$  with  $P_i$  at the temperature used to calculate vapor pressure of HAP in Equation 10]

$MW_i$  = molecular weight of each HAP

$n$  = number of HAP compounds in the emission stream

$i$  = identifier for a HAP compound

(2) If the vessel contents are heated to a temperature that is higher than 10 K below the boiling point and less than the boiling point, emissions must be calculated using the procedures in paragraph (d)(2)(i)(C)(2)(i), or (ii), or (iii) of this section.

(i) Use Equation 10 of this subpart. In Equation 10 of this subpart, the HAP vapor pressures must be determined at the temperature 10 K below the boiling point. In the calculation of  $\Delta 0$  for Equation 10 of this subpart,  $T_2$  must be the temperature 10 K below the boiling point, and  $Pa_2$  must be determined at the temperature 10 K below the boiling point. In the calculation of  $MW_{HAP}$ , the HAP partial pressures must be determined at the temperature 10 K below the boiling point.

(ii) Use Equation 11 of this subpart. In Equation 11 of this subpart, the HAP partial pressures must be determined at the temperature 10 K below the boiling point. In the calculation of  $\Delta 0$  for Equation 11 of this subpart,  $T_2$  must be the temperature 10 K below the boiling point, and

$P_{a_2}$  must be determined at the temperature 10 K below the boiling point. In the calculation of  $MW_{HAP}$ , the HAP partial pressures must be determined at the temperature 10 K below the boiling point.

(iii) Use Equation 11 of this subpart over specific temperature increments. If the initial temperature is lower than 10 K below the boiling point, emissions must be calculated as the sum over two increments; one increment is from the initial temperature to 10 K below the boiling point, and the second is from 10 K below the boiling point to the lower of either the final temperature or the temperature 5 K below the boiling point. If the initial temperature is higher than 10 K below the boiling point, emissions are calculated over one increment from the initial temperature to the lower of either the final temperature or the temperature 5 K below the boiling point.

(3) Emissions caused by heating a vessel are calculated using Equation 15 of this subpart.

$$E = MW_{HAP} \times \left( N_{avg} \times \ln \left( \frac{P_T - \sum_{i=1}^n (P_{i,1})}{P_T - \sum_{i=1}^n (P_{i,2})} \right) - (n_{i,2} - n_{i,1}) \right) \quad (\text{Eq. 15})$$

where:

$E$  = mass of HAP vapor displaced from the vessel  
being heated

$N_{\text{avg}}$  = average gas space molar volume during the heating process

$P_T$  = total pressure in the vessel

$P_{i,1}$  = partial pressure of the individual HAP compounds at  $T_1$

$P_{i,2}$  = partial pressure of the individual HAP compounds at  $T_2$

$MW_{\text{HAP}}$  = average molecular weight of the HAP compounds

$n_{i,1}$  = number of moles of condensable in the vessel headspace at  $T_1$

$n_{i,2}$  = number of moles of condensable in the vessel headspace at  $T_2$

$n$  = number of HAP compounds in the emission stream

The average gas space molar volume during the heating process is calculated using Equation 16 of this subpart.

$$N_{\text{avg}} = \frac{VP_T}{2R} \left( \frac{1}{T_1} + \frac{1}{T_2} \right) \quad (\text{Eq. 16})$$

where:

$N_{\text{avg}}$  = average gas space molar volume during the heating process

$V$  = volume of free space in vessel

$P_T$  = total pressure in the vessel

$R$  = ideal gas law constant

$T_1$  = initial temperature of the vessel

$T_2$  = final temperature of the vessel

The difference in the number of moles of condensable in the vessel headspace between the initial and final temperatures is calculated using Equation 17 of this subpart.

$$(n_{i,2} - n_{i,1}) = \frac{V}{(R)(T_2)} \sum_{i=1}^n P_{i,2} - \frac{V}{(R)(T_1)} \sum_{i=1}^n P_{i,1} \quad (\text{Eq. 17})$$

where:

V = volume of free space in vessel

R = ideal gas law constant

T<sub>1</sub> = initial temperature in the vessel

T<sub>2</sub> = final temperature in the vessel

P<sub>i,1</sub> = partial pressure of the individual HAP compounds at T<sub>1</sub>

P<sub>i,2</sub> = partial pressure of the individual HAP compounds at T<sub>2</sub>

n = number of HAP compounds in the emission stream

(4) If the vessel contents are heated to the boiling point, emissions must be calculated using the procedure in paragraphs (d)(2)(i)(c)(4)(i) and (ii) of this section.

(i) Use either of the procedures in paragraph (d)(3)(i)(B)(3) of this section to calculate the emissions from heating to the boiling point (note that Pa<sub>2</sub>=0 in the calculation of )0); and

(ii) While boiling, the vessel must be operated with a properly operated process condenser. An initial demonstration that a process condenser is properly operated is

required for vessels that operate process condensers without secondary condensers that are air pollution control devices. The owner or operator must either measure the condenser exhaust gas temperature and show it is less than the boiling point of the substance(s) in the vessel, or perform a material balance around the vessel and condenser to show that at least 99 percent of the material vaporized while boiling is condensed. Uncontrolled emissions are assumed to be zero under these conditions. The initial demonstration shall be conducted for all appropriate operating scenarios and documented in the Notification of Compliance report described in § 63.1260 (f).

(D) Depressurization. Emissions from depressurization shall be calculated using the procedures in either paragraphs (d)(2)(i)(D)(1) through (4), paragraphs (d)(2)(i)(D)(5) through (9), or paragraph (d)(2)(i)(D)(10) of this section.

(1) Equations 18 and 19 of this subpart are used to calculate the initial and final volumes of noncondensable gas present in the vessel, adjusted to atmospheric pressure. The HAP partial pressures may be calculated using Raoult's law.



$$V_{nc1} = \frac{VP_{nc1}}{760} \quad (\text{Eq. 18})$$

$$V_{nc2} = \frac{VP_{nc2}}{760} \quad (\text{Eq. 19})$$

where:

$V_{nc1}$  = initial volume of noncondensable gas in the vessel

$V_{nc2}$  = final volume of noncondensable gas in the vessel

$V$  = free volume in the vessel being depressurized

$P_{nc1}$  = initial partial pressure of the noncondensable gas, as calculated using Equation 20 of this subpart, mmHg

$P_{nc2}$  = final partial pressure of the noncondensable gas, as calculated using Equation 21 of this subpart, mmHg

760 = atmospheric pressure, mmHg

(2) The initial and final partial pressures of the noncondensable gas in the vessel are determined using Equations 20 and 21 of this subpart.

$$P_{nc1} = P_1 - \sum_{j=1}^m (P_j^*) (x_j) \quad (\text{Eq. 20})$$

$$P_{nc2} = P_2 - \sum_{j=1}^m (P_j^*) (x_j) \quad (\text{Eq. 21})$$

where:

$P_{nc1}$  = initial partial pressure of the noncondensable gas

$P_{nc2}$  = final partial pressure of the noncondensable gas

$P_1$  = initial vessel pressure

$P_2$  = final vessel pressure

$P_j^*$  = vapor pressure of each condensable (including HAP) in the emission stream

$x_j$  = mole fraction of each condensable (including HAP) in the emission stream

$m$  = number of condensable compounds (including HAP) in the emission stream

$j$  = identifier for a condensable compound

(3) The average ratio of moles of noncondensable to moles of HAP is calculated using Equation 22 of this subpart:

$$n_R = \frac{\left( \frac{P_{nc1}}{\sum_{i=1}^n (P_i^*) (x_i)} + \frac{P_{nc2}}{\sum_{i=1}^n (P_i^*) (x_i)} \right)}{2} \quad (\text{Eq. 22})$$

where:

$n_R$  = average ratio of moles of noncondensable to moles of HAP

$P_{nc1}$  = initial partial pressure of the noncondensable gas, as calculated using Equation 20 of this subpart

$P_{nc2}$  = final partial pressure of the noncondensable gas, as calculated using Equation 21 of this subpart

$P_i^*$  = vapor pressure of each individual HAP

$x_i$  = mole fraction of each individual HAP in the liquid phase

$n$  = number of HAP compounds

$i$  = identifier for a HAP compound

(4) The mass of HAP emitted shall be calculated using Equation 23 of this subpart:

$$E = \frac{V_{nc1} - V_{nc2}}{n_R} \times \frac{P_{atm}}{RT} \times MW_{HAP} \quad (\text{Eq. 23})$$

where:

$E$  = mass of HAP emitted

$V_{nc1}$  = initial volume of noncondensable gas in the vessel, as calculated using Equation 18 of this subpart

$V_{nc2}$  = final volume of noncondensable gas in the vessel, as calculated using Equation 19 of this subpart

$n_R$  = average ratio of moles of noncondensable to moles of HAP, as calculated using Equation 22 of this subpart

$P_{atm}$  = atmospheric pressure, standard

$R$  = ideal gas law constant

$T$  = temperature of the vessel, absolute

$MW_{HAP}$  = average molecular weight of the HAP, as

calculated using Equation 14 of this subpart

(5) The moles of HAP vapor initially in the vessel are calculated using the ideal gas law using Equation 24 of this subpart:

$$n_{HAP} = \frac{(Y_{HAP}) (V) (P_1)}{R T} \quad (\text{Eq. 24})$$

where:

$Y_{HAP}$  = mole fraction of HAP (the sum of the individual HAP fractions,  $\sum Y_i$ )

$V$  = free volume in the vessel being depressurized

$P_1$  = initial vessel pressure

$R$  = ideal gas law constant

$T$  = vessel temperature, absolute

(6) The initial and final moles of noncondensable gas present in the vessel are calculated using Equations 25 and 26 of this subpart:

$$n_1 = \frac{VP_{nc_1}}{RT} \quad (\text{Eq. 25})$$

$$n_2 = \frac{VP_{nc_2}}{RT} \quad (\text{Eq. 26})$$

where:

$n_1$  = initial number of moles of noncondensable gas in the vessel

$n_2$  = final number of moles of noncondensable gas in the vessel

$V$  = free volume in the vessel being depressurized

$P_{nc1}$  = initial partial pressure of the noncondensable gas, as calculated using Equation 20 of this subpart

$P_{nc2}$  = final partial pressure of the noncondensable gas, as calculated using Equation 21 of this subpart

$R$  = ideal gas law constant

$T$  = temperature, absolute

(7) The initial and final partial pressures of the noncondensable gas in the vessel are determined using Equations 20 and 21 of this subpart.

(8) The moles of HAP emitted during the depressurization are calculated by taking an approximation of the average ratio of moles of HAP to moles of noncondensable and multiplying by the total moles of noncondensables released during the depressurization, using Equation 27 of this subpart:

$$n_{HAP} = \frac{\left( \frac{n_{HAP,1}}{n_1} + \frac{n_{HAP,2}}{n_2} \right)}{2} [n_1 - n_2] \quad (\text{Eq. 27})$$

where:

$n_{HAP}$  = moles of HAP emitted

$n_1$  = initial number of moles of noncondensable gas  
in the vessel, as calculated using Equation 25  
of this subpart

$n_2$  = final number of moles of noncondensable gas in  
the vessel, as calculated using Equation 26 of  
this subpart

(9) The mass of HAP emitted can be calculated using  
Equation 28 of this subpart:

$$E = n_{\text{HAP}} * MW_{\text{HAP}} \quad (\text{Eq. 28})$$

where:

$E$  = mass of HAP emitted

$n_{\text{HAP}}$  = moles of HAP emitted, as calculated using  
Equation 27 of this subpart

$MW_{\text{HAP}}$  = average molecular weight of the HAP as  
calculated using Equation 14 of this subpart

(10) Emissions from depressurization may be calculated  
using Equation 29 of this subpart:

$$E = \frac{V}{(R)(T)} \times \ln \left( \frac{P_1 - \sum_{i=1}^n (P_i)}{P_2 - \sum_{i=1}^n (P_i)} \right) \times \sum_{i=1}^n (P_i) (MW_i) \quad (\text{Eq. 29})$$

where:

$V$  = free volume in vessel being depressurized

$R$  = ideal gas law constant

$T$  = temperature of the vessel, absolute

$P_1$  = initial pressure in the vessel

$P_2$  = final pressure in the vessel

$P_i$  = partial pressure of the individual HAP compounds

$MW_i$  = molecular weight of the individual HAP compounds

$n$  = number of HAP compounds in the emission stream

$i$  = identifier for a HAP compound

(E) Vacuum systems. Emissions from vacuum systems may be calculated using Equation 30 of this subpart if the air leakage rate is known or can be approximated.

$$E = \frac{(MW_{HAP})(La)(t)}{MW_{nc}} \left( \frac{P_{system}}{P_{system} - P_i^*} - 1 \right) \quad (\text{Eq. 30})$$

where:

$E$  = mass of HAP emitted

$P_{system}$  = absolute pressure of receiving vessel or ejector outlet conditions, if there is no receiver

$P_i^*$  = vapor pressure of the HAP at the receiver temperature or the ejector outlet conditions

$La$  = total air leak rate in the system, mass/time

$MW_{nc}$  = molecular weight of noncondensable gas

$t$  = time of vacuum operation

$MW_{HAP}$  = average molecular weight of HAP in the emission stream, as calculated using Equation 14 of this subpart, with HAP partial

pressures calculated at the temperature of the receiver or ejector outlet, as appropriate

(F) Gas evolution. Emissions from gas evolution shall be calculated using Equation 9 of this subpart with V calculated using Equation 31 of this subpart:

$$V = \frac{(W_g)(R)(T)}{(P_T)(MW_g)} \quad (\text{Eq. 31})$$

where:

V = volumetric flow rate of gas evolution

$W_g$  = mass flow rate of gas evolution

R = ideal gas law constant

T = temperature at the exit, absolute

$P_T$  = vessel pressure

$MW_g$  = molecular weight of the evolved gas

(G) Air drying. Emissions from air drying shall be calculated using Equation 32 of this subpart:

$$E = B \times \left( \frac{PS_1}{100 - PS_1} - \frac{PS_2}{100 - PS_2} \right) \quad (\text{Eq. 32})$$

where:

E = mass of HAP emitted

B = mass of dry solids

$PS_1$  = HAP in material entering dryer, weight percent

$PS_2$  = HAP in material exiting dryer, weight percent



(H) Empty Vessel Purging. Emissions from empty vessel purging shall be calculated using Equation (33) of this subpart (Note: The term  $-Ft/v$  can be assumed to be 1):

$$E = \left( \frac{V}{RT} \times \left( \sum_{i=1}^n (P_i)(MW_i) \right) (1 - e^{-Ft/v}) \right) \quad (33)$$

where:

V = volume of empty vessel

R = ideal gas law constant

T = temperature of the vessel vapor space; absolute

$P_i$  = partial pressure of the individual HAP at the beginning of the purge

$(MW_i)$  = molecular weight of the individual HAP

F = flowrate of the purge gas

t = duration of the purge

n = number of HAP compounds in the emission stream

i = identifier for a HAP compound

(ii) Engineering assessments. The owner or operator shall conduct an engineering assessment to calculate uncontrolled HAP emissions for each emission episode that is not due to vapor displacement, purging, heating, depressurization, vacuum operations, gas evolution, or air drying. For emission episodes caused by any of these types of activities, the owner or operator also may calculate uncontrolled HAP emissions based on an engineering assessment if the owner or operator can demonstrate to the

Administrator that the methods in paragraph (d)(2)(i) of this section are not appropriate. One criterion the owner or operator could use to demonstrate that the methods in paragraph (d)(2)(i) of this section are not appropriate is if previous test data are available that show a greater than 20 percent discrepancy between the test value and the estimated value. An engineering assessment includes, but is not limited to, the following:

(A) Previous test results, provided the tests are representative of current operating practices at the process unit.

(B) Bench-scale or pilot-scale test data representative of the process under representative operating conditions.

(C) Maximum flow rate, HAP emission rate, concentration, or other relevant parameter specified or implied within a permit limit applicable to the process vent.

(D) Design analysis based on accepted chemical engineering principles, measurable process parameters, or physical or chemical laws or properties. Examples of analytical methods include, but are not limited to:

(1) Use of material balances based on process stoichiometry to estimate maximum organic HAP concentrations.

(2) Estimation of maximum flow rate based on physical equipment design such as pump or blower capacities.

(3) Estimation of HAP concentrations based on saturation conditions.

(E) All data, assumptions, and procedures used in the engineering assessment shall be documented in accordance with § 63.1260(e). Data or other information supporting a finding that the emissions estimation equations are inappropriate shall be reported in the Precompliance report.

(3) Controlled emissions. An owner or operator shall determine controlled emissions using the procedures in either paragraph (d)(3)(i) or (ii) of this section. For condensers, controlled emissions shall be calculated using the emission estimation equations described in paragraph (d)(3)(i)(B) of this section.

(i) Small control devices. Except for condensers, controlled emissions for each process vent that is controlled using a small control device shall be determined by using the design evaluation described in paragraph (d)(3)(i)(A) of this section, or conducting a performance test in accordance with paragraph (d)(3)(ii) of this section. Whenever a small control device becomes a large control device, the owner or operator must comply with the provisions in paragraph (d)(3)(ii) of this section and submit the test report in the next Periodic report.

(A) Design evaluation. The design evaluation shall include documentation demonstrating that the control device being used achieves the required control efficiency under worst-case conditions, as determined from the emission profile described in § 63.1257(b)(8)(ii). The control efficiency determined from this design evaluation shall be applied to uncontrolled emissions to estimate controlled emissions. The documentation must be conducted in accordance with the provisions in paragraph (a)(1) of this section. The design evaluation shall also include the value(s) and basis for the parameter(s) monitored under § 63.1258.

(B) Emission estimation equations. An owner or operator using a condenser as a control device shall determine controlled emissions using exhaust gas temperature measurements and calculations for each batch emission episode within each unit operation according to the engineering methodology in paragraphs (d)(3)(i)(B)(1) through (8) of this section. Individual HAP partial pressures shall be calculated as specified in paragraph (d)(2)(i) of this section.

(1) Emissions from vapor displacement shall be calculated using Equation 8 of this subpart with T set equal to the temperature of the receiver and the HAP partial pressures determined at the temperature of the receiver.

(2) Emissions from purging shall be calculated using Equation 9 of this subpart with T set equal to the temperature of the receiver and the HAP partial pressures determined at the temperature of the receiver.

(3) Emissions from heating shall be calculated using either Equation 10 of this subpart or Equation 34 of this subpart. In Equation 10, the HAP vapor pressures shall be determined at the temperature of the receiver. In Equations 10 and 34 of this subpart,  $\Delta n$  is equal to the number of moles of noncondensable displaced from the vessel, as calculated using Equation 12 of this subpart. In Equations 10 and 34 of this subpart, the HAP average molecular weight shall be calculated using Equation 14 with the HAP partial pressures determined at the temperature of the receiver.

$$E = \Delta n \times \frac{\sum_{i=1}^n P_i}{P_T - \sum_{j=1}^m P_j} \times MW_{HAP} \quad (\text{Eq. 34})$$

where:

E = mass of HAP emitted

$\Delta n$  = moles of noncondensable gas displaced

$P_T$  = pressure in the receiver

$P_i$  = partial pressure of the individual HAP at the receiver temperature

$P_j$  = partial pressure of the individual condensable  
(including HAP) at the receiver temperature

$n$  = number of HAP compounds in the emission stream

$i$  = identifier for a HAP compound

$MW_{HAP}$  = the average molecular weight of HAP in vapor  
exiting the receiver, as calculated using  
Equation 14 of this subpart

$m$  = number of condensable compounds (including HAP) in  
the emission stream

(4) Emissions from depressurization shall be  
calculated using Equation 35 of this subpart.

$$E = (V_{nc1} - V_{nc2}) \times \frac{\sum_{i=1}^n (P_i)}{P_T - \sum_{j=1}^m (P_j)} \times \frac{P_T}{RT} \times MW_{HAP} \quad (\text{Eq. 35})$$

where:

$E$  = mass of HAP vapor emitted

$V_{nc1}$  = initial volume of noncondensable in the vessel,  
corrected to the final pressure, as calculated  
using Equation 36 of this subpart

$V_{nc2}$  = final volume of noncondensable in the vessel, as  
calculated using Equation 37 of this subpart

$P_i$  = partial pressure of each individual HAP at the  
receiver temperature

$P_j$  = partial pressure of each condensable (including  
HAP) at the receiver temperature

$P_T$  = receiver pressure

$T$  = temperature of the receiver

$R$  = ideal gas law constant

$MW_{HAP}$  = the average molecular weight of HAP calculated using Equation 14 of this subpart with partial pressures determined at the receiver temperature

$i$  = identifier for a HAP compound

$n$  = number of HAP compounds in the emission stream

$m$  = number of condensable compounds (including HAP) in the emission stream

$j$  = identifier for a condensable compound

The initial and final volumes of noncondensable gas present in the vessel, adjusted to the pressure of the receiver, are calculated using Equations 36 and 37 of this subpart.

$$V_{nc1} = \frac{VP_{nc1}}{P_T} \quad (\text{Eq. 36})$$

$$V_{nc2} = \frac{VP_{nc2}}{P_T} \quad (\text{Eq. 37})$$

where:

$V_{nc1}$  = initial volume of noncondensable gas in the vessel

$V_{nc2}$  = final volume of noncondensable gas in the vessel

$V$  = free volume in the vessel being depressurized

$P_{nc1}$  = initial partial pressure of the noncondensable gas, as calculated using Equation 38 of this subpart

$P_{nc2}$  = final partial pressure of the noncondensable gas, as calculated using Equation 39 of this subpart

$P_T$  = pressure of the receiver

Initial and final partial pressures of the noncondensable gas in the vessel are determined using Equations 38 and 39 of this subpart.

$$P_{nc1} = P_1 - \sum_{j=1}^m P_j \quad (\text{Eq. 38})$$

$$P_{nc2} = P_2 - \sum_{j=1}^m P_j \quad (\text{Eq. 39})$$

where:

$P_{nc1}$  = initial partial pressure of the noncondensable gas in the vessel

$P_{nc2}$  = final partial pressure of the noncondensable gas in the vessel

$P_1$  = initial vessel pressure

$P_2$  = final vessel pressure

$P_j$  = partial pressure of each condensable compound (including HAP) in the vessel

$m$  = number of condensable compounds (including HAP) in the emission stream



j = identifier for a condensable compound

(5) Emissions from vacuum systems shall be calculated using Equation 30 of this subpart.

(6) Emissions from gas evolution shall be calculated using Equation 9 with V calculated using Equation 31 of this subpart, T set equal to the receiver temperature, and the HAP partial pressures determined at the receiver temperature. The term for time, t, in Equation 9 of this subpart is not needed for the purposes of this calculation.

(7) Emissions from air drying shall be calculated using Equation 8 of this subpart with V equal to the air flow rate and  $P_i$  determined at the receiver temperature.

(8) Emissions from empty vessel purging shall be calculated using equation 40 of this subpart:

$$E = \frac{V}{R} \left[ \left( \sum_{i=1}^n \frac{(P_i)_{T_1} (MW_i)}{T_1} \right) (-e^{-P_i V}) - \left( \sum_{i=1}^n \frac{(P_i)_{T_2} (MW_i)}{T_2} \right) \ln \left( \frac{\sum_{i=1}^n (P_i)_{T_2}}{\sum_{i=1}^n (P_i)_{T_1}} + 1 \right) \right]$$

(Eq. 40)

where:

V = volume of empty vessel

R = ideal gas law constant

$T_1$  = temperature of the vessel vapor space at beginning of purge

$T_2$  = temperature of the receiver, absolute

$(P_i)_{T_1}$  = partial pressure of the individual HAP at the beginning of the purge

$(P_i)_{T_2}$  = partial pressure of the individual HAP at the receiver temperature

$MW_i$  = molecular weight of the individual HAP

$F$  = flowrate of the purge gas

$t$  = duration of the purge

$n$  = number of HAP compounds in the emission stream

$i$  = identifier for a HAP compound

(ii) Large control devices. Except for condensers, controlled emissions for each process vent that is controlled using a large control device shall be determined by applying the control efficiency of the large control device to the estimated uncontrolled emissions. The control efficiency shall be determined by conducting a performance test on the control device as described in paragraphs (d)(3)(ii)(A) through (C) of this section, or by using the results of a previous performance test as described in paragraph (d)(4) of this section. If the control device is intended to control only hydrogen halides and halogens, the owner or operator may assume the control efficiency of organic HAP is zero percent. If the control device is intended to control only organic HAP, the owner or operator may assume the control efficiency for hydrogen halides and halogen is zero percent. Owners and operators are not required to conduct performance tests for devices

described in paragraphs (a)(4) and (d)(4) of this section that are large control devices, as defined in § 63.1251.

(A) The performance test shall be conducted by performing emission testing on the inlet and outlet, or, if complying with the provisions of § 63.1254(c), on the outlet of the control device, following the test methods and procedures of § 63.1257(b). Concentrations shall be calculated from the data obtained through emission testing according to the procedures in paragraph (a)(2) of this section. If the control device is a combustion device that uses supplemental combustion air, the concentrations shall be corrected to 3 percent oxygen according to the procedures in paragraph (a)(3) of this section.

(B) Performance testing shall be conducted under absolute, or hypothetical worst-case conditions, as defined in paragraphs (b)(8)(i)(A) through (B) of this section.

(C) The owner or operator may elect to conduct more than one performance test on the control device for the purpose of establishing more than one operating condition at which the control device achieves the required control efficiency.

(4) An owner or operator is not required to conduct a performance test for the following:

(i) Any control device for which a previous performance test was conducted, provided the test was

conducted using the same procedures specified in § 63.1257(b) over conditions typical of the appropriate worst-case, as defined in § 63.1257(b)(8)(i). The results of the previous performance test shall be used to demonstrate compliance.

(e) Compliance with wastewater provisions.

(1) Determining annual average concentration and annual load. To determine the annual average concentration and annual load of partially soluble and/or soluble HAP compounds in a wastewater stream, as required by § 63.1256(a)(1), an owner or operator shall comply with the provisions in paragraphs (e)(1)(i) through (iii) of this section. A wastewater stream is exempt from the requirements of § 63.1256(a)(2) if the owner or operator determines the annual average concentration and annual load are below all of the applicability cutoffs specified in § 63.1256(a)(1)(A) through (D). For annual average concentration, only initial rinses are included. Concentration measurements based on Method 305 shall be adjusted by dividing each concentration by the compound-specific Fm factor listed in Table 8 of this subpart. Concentration measurements based on methods other than Method 305 may not be adjusted by the compound-specific Fm factor listed in Table 8 of this subpart.

(i) Annual average concentration definition.

(A) When complying with § 63.1256(a)(1)(i)(A), the annual average concentration means the total mass of partially soluble HAP compounds occurring in the wastewater stream during the calendar year divided by the total mass of the wastewater stream discharged during the same calendar year.

(B) When complying with § 63.1256(a)(1)(i) (B) or (C), the annual average concentration means the total mass of partially soluble and/or soluble HAP compounds occurring in the wastewater stream during the calendar year divided by the total mass of the wastewater stream discharged during the same calendar year.

(C) When complying with § 63.1256(a)(1)(i)(D), the annual average concentration means the total mass of soluble HAP compounds occurring in the wastewater stream during the calendar year divided by the total mass of the wastewater stream discharged during the same calendar year.

(ii) Determination of annual average concentration.

An owner or operator shall determine annual average concentrations of partially soluble and/or soluble HAP compounds in accordance with the provisions specified in paragraph (e)(1)(ii)(A), (B), or (C) of this section. The owner or operator may determine annual average concentrations by process simulation. Data and other information supporting the simulation shall be reported in

the Precompliance Report for approval by the Administrator. The annual average concentration shall be determined either at the POD or downstream of the POD with adjustment for concentration changes made according to paragraph (e)(1)(ii)(D) of this section.

(A) Test methods. The concentration of partially soluble HAP, soluble HAP, or total HAP shall be measured using any of the methods described in paragraphs (b)(10)(i) through (iv) of this section.

(B) Knowledge of the wastewater stream. The concentration of partially soluble HAP, soluble HAP, or total HAP shall be calculated based on knowledge of the wastewater stream according to the procedures in paragraphs (e)(1)(ii)(B)(1) and (2) of this section. The owner or operator shall document concentrations in the Notification of Compliance Status report described in § 63.1260(f).

(1) Mass balance. The owner or operator shall calculate the concentrations of HAP compounds in wastewater considering the total quantity of HAP discharged to the water, the amount of water at the POD, and the amounts of water and solvent lost to other mechanisms such as reactions, air emissions, or uptake in product or other processing materials. The quantities of HAP and water shall be based on batch sheets, manufacturing tickets, or FDA bills of materials. In cases where a chemical reaction

occurs that generates or consumes HAP, the amount of HAP remaining after a reaction shall be based on stoichiometry assuming 100 percent theoretical consumption or yield, as applicable.

(2) Published water solubility data. For single components in water, owners and operators may use the water solubilities published in standard reference texts at the POD temperature to determine maximum HAP concentration.

(C) Bench scale or pilot-scale test data. The concentration of partially soluble HAP, soluble HAP, or total HAP shall be calculated based on bench scale or pilot-scale test data. The owner or operator shall provide sufficient information to demonstrate that the bench-scale or pilot-scale test concentration data are representative of actual HAP concentrations. The owner or operator shall also provide documentation describing the testing protocol, and the means by which sample variability and analytical variability were accounted for in the determination of HAP concentrations. Documentation of the pilot-scale or bench scale analysis shall be provided in the precompliance report.

(D) Adjustment for concentrations determined downstream of the POD. The owner or operator shall make corrections to the annual average concentration when the concentration is determined downstream of the POD at a location where: two or more wastewater streams have been

mixed; one or more wastewater streams have been treated; or, losses to the atmosphere have occurred. The owner or operator shall make the adjustments either to the individual data points or to the final annual average concentration.

(iii) Determination of annual load. An owner or operator shall calculate the partially soluble and/or soluble HAP load in a wastewater stream based on the annual average concentration determined in paragraph (e)(1)(ii)(A), (B), or (C) of this section and the total volume of the wastewater stream, based on knowledge of the wastewater stream in accordance with paragraphs (e)(1)(ii)(B) of this section. The owner or operator shall maintain records of the total liters of wastewater discharged per year as specified in § 63.1259(b).

(2) Compliance with treatment unit control provisions

(i) Performance tests and design evaluations-general.

To comply with the control options in § 63.1256(g)(10) or (13), neither a design evaluation nor a performance test is required. For any other nonbiological treatment process, the owner or operator shall conduct either a design evaluation as specified in paragraph (e)(2)(ii) of this section, or a performance test as specified in paragraph (e)(2)(iii) of this section to demonstrate that each nonbiological treatment process used to comply with § 63.1256(g)(8), (9), and/or (12) achieves the conditions specified for compliance. The owner or operator shall demonstrate by the



procedures in either paragraph (e)(2)(ii) or (iii) of this section that each closed biological treatment process used to comply with § 63.1256(g)(8)(ii), (9)(ii), (11), or (12) achieves the conditions specified for compliance. If an open biological treatment unit is used to comply with § 63.1256(g)(8)(ii), (9)(ii), (11), or (12), the owner or operator shall comply with the performance test requirements in paragraph (e)(2)(iii) of this section.

(ii) Design evaluation. A design evaluation and supporting documentation that addresses the operating characteristics of the treatment process and that is based on operation at a wastewater stream flow rate and a concentration under which it would be most difficult to demonstrate compliance. For closed biological treatment processes, the percent reduction from removal/destruction in the treatment unit and control device shall be determined by a mass balance over the unit. The mass flow rate of soluble and/or partially soluble HAP compounds exiting the treatment process shall be the sum of the mass flow rate of soluble and/or partially soluble HAP compounds in the wastewater stream exiting the biological treatment process and the mass flow rate of the vented gas stream exiting the control device. The mass flow rate entering the treatment process minus the mass flow rate exiting the process determines the actual mass removal. Compounds that meet the requirements specified in paragraph (e)(2)(iii)(A)(4) of this section are

not required to be included in the design evaluation; the term "performance test" in paragraph (e)(2)(iii)(A)(4) of this section shall mean "design evaluation" for the purposes of this paragraph.

(iii) Performance tests. Performance tests shall be conducted using test methods and procedures that meet the applicable requirements specified in paragraphs (e)(2)(iii)(A) through (G) of this section.

(A) General. This paragraph specifies the general procedures for performance tests that are conducted to demonstrate compliance of a treatment process with the control requirements specified in § 63.1256(g).

(1) Representative process unit operating conditions. Compliance shall be demonstrated for representative operating conditions. Operations during periods of malfunction and periods of nonoperation shall not constitute representative conditions. The owner or operator shall record the process information that is necessary to document operating conditions during the test.

(2) Representative treatment process operating conditions. Performance tests shall be conducted when the treatment process is operating at a representative inlet flow rate and concentration. If the treatment process will be operating at several different sets of representative operating conditions, the owner or operator shall comply with paragraphs (e)(2)(iii)(A)(2)(i) and (ii) of this

section. The owner or operator shall record information that is necessary to document treatment process or control device operating conditions during the test.

(i) Range of operating conditions. If the treatment process will be operated at several different sets of representative operating conditions, performance testing over the entire range is not required. In such cases, the performance test results shall be supplemented with modeling and/or engineering assessments to demonstrate performance over the operating range.

(ii) Consideration of residence time. If concentration and/or flow rate to the treatment process are not relatively constant (i.e., comparison of inlet and outlet data will not be representative of performance), the owner or operator shall consider residence time, when determining concentration and flow rate.

(3) Testing equipment. All testing equipment shall be prepared and installed as specified in the applicable test methods, or as approved by the Administrator.

(4) Compounds not required to be considered in performance tests. Compounds that meet the requirements specified in (e)(2)(iii)(A)(4)(i), (ii), or (iii) of this section are not required to be included in the performance test. Concentration measurements based on Method 305 shall be adjusted by dividing each concentration by the compound-specific Fm factor listed in Table 8 of this subpart.

Concentration measurements based on methods other than Method 305 shall not be adjusted by the compound-specific Fm factor listed in Table 8 of this subpart.

(i) Compounds not used or produced by the PMPU; or

(ii) Compounds with concentrations at the POD that are below 1 ppmw; or

(iii) Compounds with concentrations at the POD that are below the lower detection limit where the lower detection limit is greater than 1 ppmw. The method shall be an analytical method for wastewater which has the compound of interest as a target analyte.

(5) Treatment using a series of treatment processes.

In all cases where the wastewater provisions in this subpart allow or require the use of a treatment process to comply with emissions limitations, the owner or operator may use multiple treatment processes. The owner or operator complying with the requirements of § 63.1256(g)(7)(i), when wastewater is conveyed by hard-piping, shall comply with either paragraph (e)(2)(iii)(A)(5)(i) or (ii) of this section. The owner or operator complying with the requirements of § 63.1256(g)(7)(ii) shall comply with the requirements of paragraph (e)(2)(iii)(A)(5)(ii) of this section.

(i) The owner or operator shall conduct the performance test across each series of treatment processes. For each series of treatment processes, inlet concentration

and flow rate shall be measured either where the wastewater enters the first treatment process in a series of treatment processes, or prior to the first treatment process as specified in paragraph (e)(2)(iii)(A)(6) of this section. For each series of treatment processes, outlet concentration and flow rate shall be measured where the wastewater exits the last treatment process in the series of treatment processes, except when the last treatment process is an open or a closed aerobic biological treatment process demonstrating compliance by using the procedures in paragraphs (e)(2)(iii)(E) or (F) of this section. When the last treatment process is either an open or a closed aerobic biological treatment process demonstrating compliance by using the procedures in paragraphs (e)(2)(iii)(E) or (F) of this section, inlet and outlet concentrations and flow rates shall be measured as provided in paragraphs (e)(2)(iii)(A)(5)(i)(A) and (B) of this section. The mass flow rate destroyed in the biological treatment process for which compliance is demonstrated using paragraph (e)(2)(iii)(E) or (F) of this section shall be added to the mass flow rate removed or destroyed in the series of treatment units before the biological treatment unit. This sum shall be used to calculate the overall control efficiency.

(A) The inlet and outlet to the series of treatment processes prior to the biological treatment process are the

points at which the wastewater enters the first treatment process and exits the last treatment process in the series, respectively, except as provided in paragraph (e)(2)(iii)(A)(6)(ii) of this section.

(B) The inlet to the biological treatment process shall be the point at which the wastewater enters the biological treatment process or the outlet from the series of treatment processes identified in paragraph (e)(2)(iii)(A)(5)(i)(A) of this section, except as provided in paragraph (e)(2)(iii)(A)(6)(ii) of this section.

(ii) The owner or operator shall conduct the performance test across each treatment process in the series of treatment processes. The mass flow rate removed or destroyed by each treatment process shall be added together and the overall control efficiency calculated to determine whether compliance has been demonstrated using paragraphs (e)(2)(iii)(C), (D), (E), (F), or (G) of this section, as applicable. If a biological treatment process is one of the treatment processes in the series of treatment processes, the inlet to the biological treatment process shall be the point at which the wastewater enters the biological treatment process, or the inlet to the equalization tank if all the criteria of paragraph (e)(2)(iii)(A)(6)(ii) of this section are met.

(6) The owner or operator determining the inlet for purposes of demonstrating compliance with

paragraph (e)(2)(iii)(E), or (F) of this section may elect to comply with paragraph (e)(2)(iii)(A)(6)(i) or (ii) of this section.

(i) When wastewater is conveyed exclusively by hard-piping from the point of determination to a treatment process that is either the only treatment process or the first in a series of treatment processes (i.e., no treatment processes or other waste management units are used upstream of this treatment process to store, handle, or convey the wastewater), the inlet to the treatment process shall be at any location from the point of determination to where the wastewater stream enters the treatment process. When samples are taken upstream of the treatment process and before wastewater streams have converged, the owner or operator shall ensure that the mass flow rate of all affected wastewater is accounted for when using § 63.1256(g)(8)(ii), (9)(ii) or (12) of this subpart to comply and that the mass flow rate of all wastewater, not just affected wastewater, is accounted for when using § 63.1256(g)(11) to comply, except as provided in paragraph (e)(2)(iii)(A)(4) of this section.

(ii) The owner or operator may consider the inlet to the equalization tank as the inlet to the biological treatment process if all the criteria in paragraphs (e)(2)(iii)(A)(6)(ii)(A) through (C) of this section are met. The outlet from the series of treatment

processes prior to the biological treatment process is the point at which the wastewater exits the last treatment process in the series prior to the equalization tank, if the equalization tank and biological treatment process are part of a series of treatment processes. The owner or operator shall ensure that the mass flow rate of all affected wastewater is accounted for when using § 63.1256(g)(9)(ii) or (12) to comply and that the mass flow rate of all wastewater, not just affected wastewater is accounted for when using § 63.1256(g)(11) to comply, except as provided in paragraph (e)(2)(iii)(A)(4) of this section.

(A) The wastewater is conveyed by hard-piping from either the last previous treatment process or the point of determination to the equalization tank.

(B) The wastewater is conveyed from the equalization tank exclusively by hard-piping to the biological treatment process and no treatment processes or other waste management units are used to store, handle, or convey the wastewater between the equalization tank and the biological treatment process.

(C) The equalization tank is equipped with a fixed roof and a closed-vent system that routes emissions to a control device that meets the requirements of § 63.1256(b)(1)(i) through (iv) and § 63.1256(b)(2)(i).

(B) Noncombustion treatment process - concentration limits. This paragraph applies to performance tests that



are conducted to demonstrate compliance of a noncombustion treatment process with the ppmw wastewater stream concentration limits at the outlet of the treatment process. This compliance option is specified in § 63.1256(g)(8)(i) and (9)(i). Wastewater samples shall be collected using sampling procedures which minimize loss of organic compounds during sample collection and analysis and maintain sample integrity per paragraph (b)(10)(iii) of this section. Samples shall be collected and analyzed using the procedures specified in paragraphs (b)(10)(i), (ii), and (iii) of this section. Samples may be grab samples or composite samples. Samples shall be taken at approximately equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of three runs. Concentration measurements based on methods other than Method 305 may be adjusted by multiplying each concentration by the compound-specific Fm factor listed in Table 8 of this subpart. (For affected wastewater streams that contains both partially soluble and soluble HAP compounds, compliance is demonstrated only if the sum of the concentrations of partially soluble HAP compounds is less than 50 ppmw, and the sum of the concentrations of soluble HAP compounds is less than 520 ppmw.)

(C) Noncombustion, nonbiological treatment process:  
percent mass removal/destruction option. This

paragraph applies to performance tests that are conducted to demonstrate compliance of a noncombustion, nonbiological treatment process with the percent mass removal limits specified in § 63.1256(g)(8)(ii) and (9)(ii) for partially soluble and soluble HAP compounds, respectively. The owner or operator shall comply with the requirements specified in paragraphs (e)(2)(iii)(C)(1) through (5) of this section.

(1) Concentration. The concentration of partially soluble and/or soluble HAP compounds entering and exiting the treatment process shall be determined as provided in this paragraph. Wastewater samples shall be collected using sampling procedures which minimize loss of organic compounds during sample collection and analysis and maintain sample integrity per paragraph (b)(10)(v) of this section. The method shall be an analytical method for wastewater which has the compound of interest as a target analyte. Samples may be grab samples or composite samples. Samples shall be taken at approximately equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of three runs. Concentration measurements based on Method 305 shall be adjusted by dividing each concentration by the compound-specific Fm factor listed in Table 8 of this subpart. Concentration measurements based on methods other than Method 305 shall not be adjusted by the compound-specific Fm factor listed in Table 8 of this subpart.

(2) Flow rate. The flow rate of the entering and exiting wastewater streams shall be determined using inlet and outlet flow meters, respectively. Where the outlet flow is not greater than the inlet flow, a single flow meter may be used, and may be used at either the inlet or outlet. Flow rate measurements shall be taken at the same time as the concentration measurements.

(3) Calculation of mass flow rate--for noncombustion, nonbiological treatment processes. The mass flow rates of partially soluble and/or soluble HAP compounds entering and exiting the treatment process are calculated using Equations 41 and 42 of this subpart.

$$QMW_a = \frac{D}{p * 10^6} \left( \sum_{k=1}^p (Q_{a,k} * C_{T,a,k}) \right) \quad (\text{Eq. 41})$$

$$QMW_b = \frac{D}{p * 10^6} \left( \sum_{k=1}^p (Q_{b,k} * C_{T,b,k}) \right) \quad (\text{Eq. 42})$$

where:

$QMW_a$ ,  $QMW_b$  = mass flow rate of partially soluble or soluble HAP compounds, average of all runs, in wastewater entering ( $QMW_a$ ) or exiting ( $QMW_b$ ) the treatment process, kg/hr

$D$  = density of the wastewater, kg/m<sup>3</sup>

$Q_{a,k}$ ,  $Q_{b,k}$  = volumetric flow rate of wastewater entering ( $Q_{a,k}$ ) or exiting ( $Q_{b,k}$ ) the treatment process during each run  $k$ ,  $m^3/hr$

$C_{T,a,k}$ ,  $C_{T,b,k}$  = total concentration of partially soluble or soluble HAP compounds in wastewater entering ( $C_{T,a,k}$ ) or exiting ( $C_{T,b,k}$ ) the treatment process during each run  $k$ , ppmw

$p$  = number of runs

$k$  = identifier for a run

$10^6$  = conversion factor, mg/kg

(4) Percent removal calculation for mass flow rate.

The percent mass removal across the treatment process shall be calculated as follows:

$$E = \frac{QMW_a - QMW_b}{QMW_a} \times 100 \quad (\text{Eq. 43})$$

where:

$E$  = removal or destruction efficiency of the treatment process, percent

$QMW_a$ ,  $QMW_b$  = mass flow rate of partially soluble or soluble HAP compounds in wastewater entering ( $QMW_a$ ) and exiting ( $QMW_b$ ) the treatment process, kg/hr (as calculated using Equations 41 and 42 of this subpart)

(5) Compare mass removal efficiency to required efficiency. Compare the mass removal efficiency (calculated in Equation 41 of this subpart) to the required efficiency as specified in § 63.1256(g)(8)(ii) or (9)(ii). If complying with § 63.1256(g)(8)(ii), compliance is demonstrated if the mass removal efficiency is 99 percent or greater. If complying with § 63.1256(g)(9)(ii), compliance is demonstrated if the mass removal efficiency is 90 percent or greater.

(D) Combustion treatment processes: percent mass removal/destruction option. This paragraph applies to performance tests that are conducted to demonstrate compliance of a combustion treatment process with the percent mass destruction limits specified in § 63.1256(g)(8)(ii) for partially soluble HAP compounds, and/or § 63.1256(g)(9)(ii) for soluble HAP compounds. The owner or operator shall comply with the requirements specified in paragraphs (e)(2)(iii)(D)(1) through (8) of this section.

(1) Concentration in wastewater stream entering the combustion treatment process. The concentration of partially soluble and/or soluble HAP compounds entering the treatment process shall be determined as provided in this paragraph. Wastewater samples shall be collected using sampling procedures which minimize loss of organic compounds during sample collection and analysis and maintain sample

integrity per paragraph (b)(10)(v) of this section. The method shall be an analytical method for wastewater which has the compound of interest as a target analyte. Samples may be grab samples or composite samples. Samples shall be taken at approximately equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of three runs. Concentration measurements based on Method 305 of appendix A of this part shall be adjusted by dividing each concentration by the compound-specific Fm factor listed in Table 8 of this subpart. Concentration measurements based on methods other than Method 305 shall not be adjusted by the compound-specific Fm factor listed in Table 8 of this subpart.

(2) Flow rate of wastewater entering the combustion treatment process. The flow rate of the wastewater stream entering the combustion treatment process shall be determined using an inlet flow meter. Flow rate measurements shall be taken at the same time as the concentration measurements.

(3) Calculation of mass flow rate in wastewater stream entering combustion treatment processes. The mass flow rate of partially soluble and/or soluble HAP compounds entering the treatment process is calculated as follows:

$$QMW_a = \frac{D}{p * 10^6} \left( \sum_{k=1}^p (Q_{a,k} * C_{T,a,k}) \right) \quad (\text{Eq. 44})$$

where:

$QMW_a$  = mass flow rate of partially soluble or soluble HAP compounds entering the combustion unit, kg/hr

$D$  = density of the wastewater stream, kg/m<sup>3</sup>

$Q_{a,k}$  = volumetric flow rate of wastewater entering the combustion unit during run k, m<sup>3</sup>/hr

$C_{T,a,k}$  = total concentration of partially soluble or soluble HAP compounds in the wastewater stream entering the combustion unit during run k, ppmw

$p$  = number of runs

$k$  = identifier for a run

(4) Concentration in vented gas stream exiting the combustion treatment process. The concentration of partially soluble and/or soluble HAP compounds (or TOC) exiting the combustion treatment process in any vented gas stream shall be determined as provided in this paragraph. Samples may be grab samples or composite samples. Samples shall be taken at approximately equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of three runs. Concentration measurements shall be determined using Method 18 of 40 CFR part 60, appendix A.

Alternatively, any other test method validated according to the procedures in Method 301 of appendix A of this part may be used.

(5) Volumetric flow rate of vented gas stream exiting the combustion treatment process. The volumetric flow rate of the vented gas stream exiting the combustion treatment process shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate. Volumetric flow rate measurements shall be taken at the same time as the concentration measurements.

(6) Calculation of mass flow rate of vented gas stream exiting combustion treatment processes. The mass flow rate of partially soluble and/or soluble HAP compounds in a vented gas stream exiting the combustion treatment process shall be calculated as follows:

$$QMG_b = K_2 * \left( \sum_{i=1}^n (CG_{b,i} * MW_i) \right) * QG_b \quad (\text{Eq. 45})$$

where:

$QMG_b$  = mass rate of TOC (minus methane and ethane) or total partially soluble and/or soluble HAP, in vented gas stream, exiting ( $QMG_b$ ) the combustion device, dry basis, kg/hr

$CG_{b,i}$  = concentration of TOC (minus methane and ethane) or total partially soluble and/or soluble HAP, in vented gas stream, exiting ( $CG_{b,i}$ ) the combustion device, dry basis, ppmv



$MW_i$  = molecular weight of a component,

kilogram/kilogram-mole

$QG_b$  = flow rate of gas stream exiting ( $QG_b$ ) the  
combustion device, dry standard cubic meters  
per hour

$K_2$  = constant,  $41.57 \times 10^{-9}$  (parts per million)<sup>-1</sup>  
(gram-mole per standard cubic meter)  
(kilogram/gram), where standard temperature  
(gram-mole per standard cubic meter) is 20°C

$i$  = identifier for a compound

$n$  = number of components in the sample

(7) Destruction efficiency calculation. The  
destruction efficiency of the combustion unit for partially  
soluble and/or soluble HAP compounds shall be calculated as  
follows:

$$E = \frac{QMW_a - QMG_b}{QMW_a} * 100 \quad (\text{Eq. 46})$$

where:

$E$  = destruction efficiency of partially soluble or  
soluble HAP compounds for the combustion unit,  
percent

$QMW_a$  = mass flow rate of partially soluble or soluble  
HAP compounds entering the combustion unit,  
kg/hr

$QMG_b$  = mass flow rate of TOC (minus methane and ethane) or partially soluble and/or soluble HAP compounds in vented gas stream exiting the combustion treatment process, kg/hr

(8) Compare mass destruction efficiency to required efficiency. Compare the mass destruction efficiency (calculated in Equation 46 of this subpart) to the required efficiency as specified in § 63.1256(g)(8)(ii) or (9)(ii). If complying with § 63.1256(g)(8)(ii), compliance is demonstrated if the mass destruction efficiency is 99 percent or greater. If complying with § 63.1256(g)(9)(ii), compliance is demonstrated if the mass destruction efficiency is 90 percent or greater.

(E) Open or closed aerobic biological treatment processes: 95-percent mass destruction option. This paragraph applies to performance tests that are conducted for open or closed aerobic biological treatment processes to demonstrate compliance with the 95-percent mass destruction provisions in § 63.1256(g)(11) for partially soluble and/or soluble HAP compounds.

(1) Concentration in wastewater stream. The concentration of partially soluble and/or soluble HAP as provided in this paragraph. Concentration measurements to determine E shall be taken as provided in paragraph (e)(2)(iii)(A)(5) of this section for a series of treatment processes. Wastewater samples shall be collected

using sampling procedures which minimize loss of organic compounds during sample collection and analysis and maintain sample integrity per paragraph (b)(10)(v) of this section. The method shall be an analytical method for wastewater which has the compound of interest as a target analyte. Samples may be grab samples or composite samples. Samples shall be taken at approximately equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of three runs. Concentration measurements based on Method 305 shall be adjusted by dividing each concentration by the compound-specific Fm factor listed in Table 8 of this subpart. Concentration measurements based on methods other than Method 305 shall not be adjusted by the compound-specific Fm factor listed in Table 8 of this subpart.

(2) Flow rate. Flow rate measurements to determine E shall be taken as provided in paragraph (e)(2)(iii)(A)(5) of this section for a series of treatment processes. Flow rate shall be determined using inlet and outlet flow measurement devices. Where the outlet flow is not greater than the inlet flow, a single flow measurement device may be used, and may be used at either the inlet or outlet. Flow rate measurements shall be taken at the same time as the concentration measurements.

(3) Destruction efficiency. The owner or operator shall comply with the provisions in either paragraph (e)(2)(iii)(E)(3)(i), (ii) or (iii) of this section. Compliance is demonstrated if the destruction efficiency,  $E$ , is equal to or greater than 95 percent.

(i) If the performance test is performed across the open or closed biological treatment system only, compliance is demonstrated if  $E$  is equal to  $F_{\text{bio}}$ , where  $E$  is the destruction efficiency of partially soluble and/or soluble HAP compounds and  $F_{\text{bio}}$  is the site-specific fraction of partially soluble and/or soluble HAP compounds biodegraded.  $F_{\text{bio}}$  shall be determined as specified in paragraph (e)(2)(iii)(E)(4) of this section and appendix C of subpart G of this part.

(ii) If compliance is being demonstrated in accordance with paragraphs (e)(2)(iii)(A)(5)(i) or (ii) of this section, the removal efficiency shall be calculated using Equation 46 of this subpart.

When complying with paragraph (e)(2)(iii)(A)(5)(i) of this section, the series of nonbiological treatment processes comprise one treatment process segment. When complying with paragraph (e)(2)(iii)(A)(5)(ii) of this section, each nonbiological treatment process is a treatment process segment.

$$E = \frac{\text{Nonbiotreatment HAP load removal} + \text{Biotreatment HAP load removal}}{\text{Total influent HAP load}}$$

$$= \frac{\left( \sum_{i=1}^n (QMW_{a,i} - QMW_{b,i}) \right) + QMW_{bio} * F_{bio}}{QMW_{all}} \quad (\text{Eq. 47})$$

where:

$QMW_{a,i}$  = the soluble and/or partially soluble HAP load entering a treatment process segment

$QMW_{b,i}$  = the soluble and/or partially soluble HAP load exiting a treatment process segment

$n$  = the number of treatment process segments

$i$  = identifier for a treatment process element

$QMW_{bio}$  = the inlet load of soluble and/or partially soluble HAP to the biological treatment process. The inlet is defined in accordance with paragraph (e)(2)(iii)(A)(6) of this section. If complying with paragraph (e)(2)(iii)(A)(6)(ii) of this section,  $QMW_{bio}$  is equal to  $QMW_{b,n}$

$F_{bio}$  = site-specific fraction of soluble and/or partially soluble HAP compounds biodegraded.  $F_{bio}$  shall be determined as specified in paragraph (e)(2)(iii)(E)(4) of this section and Appendix C of subpart G of this part.

$QMW_{all}$  = the total soluble and/or partially soluble HAP load to be treated.

(4) Site-specific fraction biodegraded ( $F_{bio}$ ). The procedures used to determine the compound-specific kinetic parameters for use in calculating  $F_{bio}$  differ for the compounds listed in Tables 2 and 3 of this subpart. An

owner or operator shall calculate  $F_{\text{bio}}$  as specified in either paragraph (e)(2)(iii)(E)(4)(i) or (ii) of this section.

(i) For biological treatment processes that do not meet the definition for enhanced biological treatment in § 63.1251, the owner or operator shall determine the  $f_{\text{bio}}$  for the compounds in Tables 2 and 3 of this subpart using any of the procedures in appendix C to part 63, except procedure 3 (inlet and outlet concentration measurements). (The symbol " $f_{\text{bio}}$ " represents the site-specific fraction of an individual partially soluble or soluble HAP compound that is biodegraded.)

(ii) If the biological treatment process meets the definition of "enhanced biological treatment process" in § 63.1251, the owner or operator shall determine  $f_{\text{bio}}$  for the compounds in Table 2 of this subpart using any of the procedures specified in appendix C to part 63. The owner or operator shall calculate  $f_{\text{bio}}$  for the compounds in Table 3 of this subpart using the defaults for first order biodegradation rate constants ( $K_1$ ) in Table 9 of this subpart and follow the procedure explained in Form III of appendix C, 40 CFR part 63, or any of the procedures specified in appendix C of 40 CFR part 63.

(F) Open or closed aerobic biological treatment processes: percent removal for partially soluble or soluble HAP compounds. This paragraph applies to the use of performance tests that are conducted for open or closed

aerobic biological treatment processes to demonstrate compliance with the percent removal provisions for either partially soluble HAP compounds in § 63.1256(g)(8)(ii) or soluble HAP compounds in § 63.1256(g)(9)(ii) or (12). The owner or operator shall comply with the provisions in paragraph (e)(2)(iii)(E) of this section, except that compliance with § 63.1256(g)(8)(ii) shall be demonstrated when E is equal to or greater than 99 percent, compliance with § 63.1256(g)(9)(ii) shall be demonstrated when E is equal to or greater than 90 percent, and compliance with § 63.1256(g)(12) shall be demonstrated when E is equal to or greater than 99 percent.

(G) Closed biological treatment processes: percent mass removal option. This paragraph applies to the use of performance tests that are conducted for closed biological treatment processes to demonstrate compliance with the percent removal provisions in §§ 63.1256(g)(8)(ii), (9)(ii), (11), or (12). The owner or operator shall comply with the requirements specified in paragraphs (e)(2)(iii)(G)(1) through (4) of this section.

(1) Comply with the procedures specified in paragraphs (e)(2)(iii)(C)(1) through (3) of this section to determine characteristics of the wastewater entering the biological treatment unit, except that the term "partially soluble and/or soluble HAP" shall mean "soluble HAP" for the purposes of this section if the owner or operator is



complying with § 63.1256(g)(9)(ii) or (12), and it shall mean "partially soluble HAP" if the owner or operator is complying with § 63.1256(g)(8)(ii).

(2) Comply with the procedures specified in paragraphs (e)(2)(iii)(D)(4) through (6) of this section to determine the characteristics of gas vent streams exiting a control device, with the differences noted in paragraphs (e)(2)(iii)(G)(3)(i) and (ii) of this section.

(i) The term "partially soluble and/or soluble HAP" shall mean "soluble HAP" for the purposes of this section if the owner or operator is complying with § 63.1256(g)(9)(ii) or (12), and it shall mean "partially soluble HAP" if the owner or operator is complying with § 63.1256(g)(8)(ii).

(ii) The term "combustion treatment process" shall mean "control device" for the purposes of this section.

(3) Percent removal/destruction calculation. The percent removal and destruction across the treatment unit and any control device(s) shall be calculated using Equation 48 of this subpart:

$$\frac{E = (QMW_a - (QMW_b + QMG_b))}{QMW_a} \quad (\text{Eq. 48})$$

where:

$E$  = removal and destruction efficiency of the treatment unit and control device(s), percent

$QMW_a$ ,  $QMW_b$  = mass flow rate of partially soluble or soluble HAP compounds in wastewater entering ( $QMW_a$ ) and exiting ( $QMW_b$ ) the treatment process, kilograms per hour (as calculated using Equations WW1 and WW2)

$QMG_b$  = mass flow rate of partially soluble or soluble HAP compounds in vented gas stream exiting the combustion treatment process, kg/hr

(4) Compare mass removal/destruction efficiency to required efficiency. Compare the mass removal/destruction efficiency (calculated using Equation 48 of this subpart) to the required efficiency as specified in § 63.1256(8)(ii), (g)(9)(ii), (11), or (12). If complying with § 63.1256(g)(8)(ii), compliance is demonstrated if the mass removal/destruction is 99 percent or greater. If complying with § 63.1256(g)(9)(ii), compliance is demonstrated if the mass removal/destruction efficiency is 90 percent or greater. If complying with § 63.1256(g)(11), compliance is demonstrated if the mass removal/destruction efficiency is 95 percent or greater. If complying with § 63.1256(g)(12),

compliance is demonstrated if the mass removal/destruction efficiency is 99 percent or greater.

(3) Compliance with control device provisions. Except as provided in paragraph (e)(3)(iv) of this section, an owner or operator shall demonstrate that each control device or combination of control devices achieves the appropriate conditions specified in § 63.1256(h)(2) by using one or more of the methods specified in paragraphs (e)(3)(i), (ii), or (iii) of this section.

(i) Performance test for control devices other than flares. This paragraph applies to performance tests that are conducted to demonstrate compliance of a control device with the efficiency limits specified in § 63.1256(h)(2). If complying with the 95-percent reduction efficiency requirement, comply with the requirements specified in paragraphs (e)(3)(i)(A) through (J) of this section. If complying with the 20 ppm by volume requirement, comply with the requirements specified in paragraphs (e)(3)(i)(A) through (G) and (e)(3)(i)(J) of this section.

(A) General. The owner or operator shall comply with the general performance test provisions in paragraphs (e)(2)(iii)(A)(1) through (4) of this section, except that the term "treatment unit" shall mean "control device" for the purposes of this section.

(B) Sampling sites. Sampling sites shall be selected using Method 1 or 1A of 40 CFR part 60, appendix A, as

appropriate. For determination of compliance with the 95 percent reduction requirement, sampling sites shall be located at the inlet and the outlet of the control device. For determination of compliance with the 20 ppmv limit, the sampling site shall be located at the outlet of the control device.

(C) Concentration in gas stream entering or exiting the control device. The concentration of total organic HAP or TOC in a gas stream shall be determined as provided in this paragraph. Samples may be grab samples or composite samples (i.e., integrated samples). Samples shall be taken at approximately equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of three runs. Concentration measurements shall be determined using Method 18 of 40 CFR part 60, appendix A. Alternatively, any other test method validated according to the procedures in Method 301 of appendix A of this part may be used.

(D) Volumetric flow rate of gas stream entering or exiting the control device. The volumetric flow rate of the gas stream shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate. Volumetric flow rate measurements shall be taken at the same time as the concentration measurements.

(E) Calculation of TOC concentration. The owner or operator shall compute TOC in accordance with the procedures in paragraph (a)(2) of this section.

(F) Calculation of total organic HAP concentration. The owner or operator determining compliance based on total organic HAP concentration shall compute the total organic HAP concentration in accordance with the provisions in paragraph (a)(2) of this section.

(G) Requirements for combustion control devices. If the control device is a combustion device, the owner or operator shall correct TOC and organic HAP concentrations to 3 percent oxygen in accordance with the provisions in paragraph (a)(3) of this section, and demonstrate initial compliance with the requirements for halogenated streams in accordance with paragraph (a)(6) of this section.

(H) Mass rate calculation. The mass rate of either TOC (minus methane and ethane) or total organic HAP for each sample run shall be calculated using the following equations. Where the mass rate of TOC is being calculated, all organic compounds (minus methane and ethane) measured by methods specified in paragraph (e)(3)(i)(C) of this section are summed using Equations 49 and 50 of this subpart. Where the mass rate of total organic HAP is being calculated, only soluble and partially soluble HAP compounds shall be summed using Equations 49 and 50.

$$QMG_a = K_2 * \left( \sum_{i=1}^n (CG_{a,i}) * (MW_i) \right) * QG_a \quad (\text{Eq. 49})$$

$$QMG_b = K_2 * \left( \sum_{i=1}^n (CG_{b,i}) * (MW_i) \right) * QG_b \quad (\text{Eq. 50})$$

where:

$CG_{a,i}$ ,  $CG_{b,i}$  = concentration of TOC or total organic HAP, in vented gas stream, entering ( $CG_{a,i}$ ) and exiting ( $CG_{b,i}$ ) the control device, dry basis, ppmv

$QMG_a$ ,  $QMG_b$  = mass rate of TOC or total organic HAP, in vented gas stream, entering ( $QMG_a$ ) and exiting ( $QMG_b$ ) the control device, dry basis, kg/hr

$Mw_i$  = molecular weight of a component, kilogram/kilogram-mole

$QG_a$ ,  $QG_b$  = flow rate of gas stream entering ( $QG_a$ ) and exiting ( $QG_b$ ) the control device, dry standard cubic meters per hour

$K_2$  = constant,  $41.57 \times 10^{-9}$  (parts per million)<sup>-1</sup> (gram-mole per standard cubic meter) (kilogram/gram), where standard temperature (gram-mole per standard cubic meter) is 20°C

i = identifier for a compound

n = number of components in the sample

(I) Percent reduction calculation. The percent reduction in TOC or total organic HAP for each sample run shall be calculated using Equation 51 of this subpart:

$$E = \frac{QMG_a - QMG_b}{QMG_a} (100\%) \quad (\text{Eq. 51})$$

where:

E = destruction efficiency of control device,  
percent

$QMG_a, QMG_b$  = mass rate of TOC or total organic HAP, in  
vented gas stream entering and exiting  
( $QMG_b$ ) the control device, dry basis,  
kilograms per hour

(J) Compare mass destruction efficiency to required efficiency. If complying with the 95-percent reduction efficiency requirement, compliance is demonstrated if the mass destruction efficiency (calculated in Equation 51 of this subpart) is 95 percent or greater. If complying with the 20 ppmv limit, compliance is demonstrated if the outlet TOC concentration is 20 ppmv, or less.

(ii) Design evaluation. A design evaluation conducted in accordance with the provisions in paragraph (a)(1) of this section. Compounds that meet the requirements specified in paragraph (e)(2)(iii)(A)(4) of this section are not required to be included in the design evaluation.

(iii) Compliance demonstration for flares. When a flare is used to comply with § 63.1256(h), the owner or operator shall comply with the flare provisions in § 63.11(b). An owner or operator is not required to conduct a performance test to determine percent emission reduction or outlet organic HAP or TOC concentration when a flare is used.

(iv) Exemptions from compliance demonstrations. An owner or operator using any control device specified in paragraph (a)(4) of this section is exempt from the requirements in paragraphs (e)(3)(i) through (e)(3)(iii) of this section and from the requirements in § 63.6(f).

(f) Pollution prevention alternative standard. The owner or operator shall demonstrate compliance with § 63.1252(e)(2) using the procedures described in paragraph (f)(1) and (f)(3) of this section. The owner or operator shall demonstrate compliance with § 63.1252(e)(3) using the procedures described in paragraphs (f)(2) and (f)(3) of this section.

(1) Compliance is demonstrated when the annual kg/kg factor, calculated according to the procedure in paragraphs (f)(1)(i) and (iii) of this section, is reduced by at least 75 percent as calculated according to the procedure in paragraph (f)(1)(i) and (ii) of this section.

(i) The production-indexed HAP consumption factors shall be calculated by dividing annual consumption of total



HAP by the annual production rate, per process. The production-indexed total VOC consumption factor shall be calculated by dividing annual consumption of total VOC by the annual production rate, per process.

(ii) The baseline factor is calculated from yearly production and consumption data for the first 3-year period in which the PMPU was operational, beginning no earlier than the 1987 calendar year, or for a minimum period of 12 months from startup of the process until the present in which the PMPU was operational and data are available, beginning no earlier than the 1987 calendar year.

(iii) The annual factor is calculated on the following bases:

(A) For continuous processes, the annual factor shall be calculated every 30 days for the 12-month period preceding the 30th day (30-day rolling average).

(B) For batch processes, the annual factor shall be calculated every 10 batches for the 12-month period preceding the 10th batch (10-batch rolling average). The annual factor shall be calculated every 5 batches if the number of batches is less than 10 for the 12-month period preceding the 10th batch and shall be calculated every year if the number of batches is less than 5 for the 12-month period preceding the 5th batch.

(2) Compliance is demonstrated when the requirements of paragraphs (f)(2)(i) through (iv) of this section are met.

(i) The annual kg/kg factor, calculated according to the procedure in paragraphs (f)(1)(i) and (f)(1)(iii) of this section, is reduced to a value equal to or less than 50 percent of the baseline factor calculated according to the procedure in paragraphs (f)(1)(i) and (ii) of this section.

(ii) The yearly reductions associated with add-on controls that meet the criteria of §§ 63.1252(h)(3)(ii)(A) through (D) must be equal to or greater than the amounts calculated in paragraphs (f)(2)(ii)(A) and (B) of this section:

(A) The mass of HAP calculated using Equation 52 of this subpart:

$$[\text{kg reduced}]_a = [\text{kg/kg}]_b(0.75 - P_R)[\text{kg produced}]_a \quad (\text{Eq. 52})$$

where:

$[\text{kg/kg}]_b$  = the baseline production-indexed HAP  
consumption factor, in kg/kg

$[\text{kg produced}]_a$  = the annual HAP production rate, in  
kg/yr

$[\text{kg reduced}]_a$  = the annual reduction required by  
add-on controls, in kg/yr

$P_R$  = the fractional reduction in the  
annual kg/kg factor achieved using  
pollution prevention where  $P_R$  is  $\geq 0.5$

(B) The mass of VOC calculated using Equation 53 of  
this subpart:

$$VOC_{\text{reduced}} = (VF_{\text{base}} - VF_P - VF_{\text{annual}}) \times M_{\text{prod}} \quad (\text{Eq. 53})$$

where:

$VOC_{\text{reduced}}$  = required VOC emission reduction from add-on  
controls, kg/yr

$VF_{\text{base}}$  = baseline VOC factor, kg VOC emitted/kg  
production

$VF_P$  = reduction in VOC factor achieved by  
pollution prevention, kg VOC emitted/kg  
production

$VF_{\text{annual}}$  = target annual VOC factor, kg VOC emitted/kg  
production

$M_{\text{prod}}$  = production rate, kg/yr

(iii) Demonstration that the criteria in  
§ 63.1252(e)(3)(ii)(A) through (D) are met shall be  
accomplished through a description of the control device and  
of the material streams entering and exiting the control  
device.

(iv) The annual reduction achieved by the add-on control shall be quantified using the methods described in § 63.1257(d).

(3) Each owner or operator of a PMPU complying with the P2 standard shall prepare a P2 demonstration summary that shall contain, at a minimum, the following information:

(i) Descriptions of the methodologies and forms used to measure and record daily consumption of HAP compounds reduced as part of the P2 standard.

(ii) Descriptions of the methodologies and forms used to measure and record daily production of products which are included in the P2 standard.

(iii) Supporting documentation for the descriptions provided in paragraphs (f)(3)(i) and (ii) including, but not limited to, operator log sheets and copies of daily, monthly, and annual inventories of materials and products.

(g) Compliance with storage tank provisions by using emissions averaging. An owner or operator with two or more affected storage tanks may demonstrate compliance with § 63.1253, as applicable, by fulfilling the requirements of paragraphs (g)(1) through (4) of this section.

(1) The owner or operator shall develop and submit for approval an Implementation Plan containing all the information required in § 63.1259(e) 6 months prior to the compliance date of the standard. The Administrator shall have 90 days to approve or disapprove the emissions

averaging plan after which time the plan shall be considered approved.

(2) The annual mass rate of total organic HAP ( $E_{Ti}$ ,  $E_{To}$ ) shall be calculated for each storage tank included in the emissions average using the procedures specified in paragraph (c)(1), (2), or (3) of this section.

(3) Equations 54 and 55 of this subpart shall be used to calculate total HAP emissions for those tanks subject to § 63.1253(b) or (c):

$$E_{Ti} = \sum_{j=1}^n E_{ij} \quad (\text{Eq. 54})$$

$$E_{To} = \sum_{j=1}^n E_{oj} \quad (\text{Eq. 55})$$

where:

$E_{ij}$  = yearly mass rate of total HAP at the inlet of the control device for tank j

$E_{oj}$  = yearly mass rate of total HAP at the outlet of the control device for tank j

$E_{Ti}$  = total yearly uncontrolled HAP emissions

$E_{To}$  = total yearly actual HAP emissions

n = number of tanks included in the emissions average

(4) The overall percent reduction efficiency shall be calculated as follows:

$$R = \frac{E_{Ti} - D E_{To}}{E_{Ti}} (100\%) \quad (\text{Eq. 56})$$

where:

R = overall percent reduction efficiency

D = discount factor = 1.1 for all controlled storage tanks

(h) Compliance with process vent provisions by using emissions averaging. An owner or operator with two or more affected processes complying with § 63.1254 by using emissions averaging shall demonstrate compliance with paragraphs (h)(1), (2) and (3) of this section.

(1) The owner or operator shall develop and submit for approval an Implementation Plan at least 6 months prior to the compliance date of the standard containing all the information required in § 63.1259(e). The Administrator shall have 90 days to approve or disapprove the emissions averaging plan. The plan shall be considered approved if the Administrator either approves the plan in writing, or fails to disapprove the plan in writing. The 90-day period shall begin when the Administrator receives the request. If the request is denied, the owner or operator must still be in compliance with the standard by the compliance date.

(2) Owners or operators shall calculate uncontrolled and controlled emissions of HAP by using the methods specified in paragraph (d)(2) and (3) of this section for each process included in the emissions average.

(i) Equations 57 and 58 of this subpart shall be used to calculate total HAP emissions:

$$E_{TU} = \sum_{j=1}^n E_{Ui} \quad (\text{Eq. 57})$$

$$E_{TC} = \sum_{j=1}^n E_{Ci} \quad (\text{Eq. 58})$$

where:

$E_{Ui}$  = yearly uncontrolled emissions from process I

$E_{Ci}$  = yearly actual emissions for process I

$E_{TU}$  = total yearly uncontrolled emissions

$E_{TC}$  = total yearly actual emissions

n = number of processes included in the emissions  
average

(3) The overall percent reduction efficiency shall be calculated using Equation 59 of this subpart:

$$R = \frac{E_{TU} - D E_{TC}}{E_{TU}} (100\%) \quad (\text{Eq. 59})$$

where:

R = overall percent reduction efficiency

D = discount factor = 1.1 for all controlled emission  
points

#### § 63.1258 Monitoring Requirements.

(a) The owner or operator of any existing, new, or reconstructed affected source shall provide evidence of continued compliance with the standard as specified in this section. During the initial compliance demonstration, maximum or minimum operating parameter levels, as appropriate, shall be established for emission sources that will indicate the source is in compliance. Test data,

calculations, or information from the evaluation of the control device design shall be used to establish the operating parameter level.

(b) Monitoring for control devices.

(1) Parameters to monitor. Except as specified in paragraph (b)(1)(i) of this section, for each control device, the owner or operator shall install and operate monitoring devices and operate within the established parameter levels to ensure continued compliance with the standard. Monitoring parameters are specified for control scenarios in Table 4 of this subpart and in paragraphs (b)(1)(ii) through (xi) of this section.

(i) Periodic verification. For control devices that control vent streams totaling less than 1 ton/yr HAP emissions, before control, monitoring shall consist of a daily verification that the device is operating properly. If the control device is used to control batch process vents alone or in combination with other streams, the verification may be on a per batch basis. This verification shall include, but not be limited to, a daily or per batch demonstration that the unit is working as designed and may include the daily measurements of the parameters described in (b)(1)(ii) through (x) of this section. This demonstration shall be included in the Precompliance report, to be submitted 6 months prior to the compliance date of the standard.



(ii) Scrubbers. For affected sources using liquid scrubbers, the owner or operator shall establish a minimum scrubber liquid flow rate or pressure drop as a site-specific operating parameter which must be measured and recorded every 15 minutes during the period in which the scrubber is functioning in achieving the HAP removal required by this subpart. If the scrubber uses a caustic solution to remove acid emissions, the owner or operator shall establish a minimum pH of the effluent scrubber liquid as a site-specific operating parameter which must be monitored at least once a day. The minimum scrubber flowrate or pressure drop shall be based on the conditions anticipated under worst-case conditions, as defined in § 63.1257(b)(8)(i).

(A) The monitoring device used to determine the pressure drop shall be certified by the manufacturer to be accurate to within a gage pressure of  $\pm 10$  percent of the maximum pressure drop measured.

(B) The monitoring device used for measurement of scrubber liquid flowrate shall be certified by the manufacturer to be accurate within  $\pm 10$  percent of the design scrubber liquid flowrate.

(C) The monitoring device shall be calibrated annually

(iii) Condensers. For each condenser, the owner or operator shall establish the maximum condenser outlet gas temperature as a site-specific operating parameter which

must be measured and recorded at least every 15 minutes during the period in which the condenser is functioning in achieving the HAP removal required by this subpart.

(A) The temperature monitoring device must be accurate to within  $\pm 2$  percent of the temperature measured in degrees Celsius or  $\pm 2.5^{\circ}\text{C}$ , whichever is greater.

(B) The temperature monitoring device must be calibrated annually.

(iv) Regenerative carbon adsorbers. For each regenerative carbon adsorber, the owner or operator shall comply with the provisions in paragraphs (b)(1)(iv)(A) through (F) of this section.

(A) Establish the regeneration cycle characteristics specified in paragraphs (b)(1)(iv)(A)(1) through (4) of this section under worst-case conditions, as defined in § 63.1257(b)(8)(i).

(1) Minimum regeneration frequency (i.e., operating time since last regeneration);

(2) Minimum temperature to which the bed is heated during regeneration;

(3) Maximum temperature to which the bed is cooled, measured within 15 minutes of completing the cooling phase; and

(4) Minimum regeneration stream flow.

(B) Monitor and record the regeneration cycle characteristics specified in paragraphs (b)(1)(iv)(B)(1) through (4) of this section for each regeneration cycle.

(1) Regeneration frequency (operating time since end of last regeneration);

(2) Temperature to which the bed is heated during regeneration;

(3) Temperature to which the bed is cooled, measured within 15 minutes of the completion of the cooling phase; and

(4) Regeneration stream flow.

(C) Use a temperature monitoring device that is accurate to within  $\pm 2$  percent of the temperature measured in degrees Celsius or  $\pm 2.5^{\circ}\text{C}$ , whichever is greater.

(D) Use a regeneration stream flow monitoring device capable of recording the total regeneration stream flow to

within  $\pm 10$  percent of the established value (i.e., accurate to within  $\pm 10$  percent of the reading).

(E) Calibrate the temperature and flow monitoring devices annually.

(F) Conduct an annual check for bed poisoning in accordance with manufacturer's specifications.

(v) Nonregenerative carbon adsorbers. For each nonregenerative carbon adsorber, the owner or operator shall establish and monitor the maximum time interval between replacement based on the conditions anticipated under worst-case, as defined in § 63.1257(b)(8)(i).

(vi) Flares. For each flare, the presence of the pilot flame shall be monitored every 15 minutes during the period in which the flare is functioning in achieving the HAP removal required by this subpart.

(vii) Thermal incinerators. For each thermal incinerator, the owner or operator shall establish the minimum temperature of the gases exiting the combustion chamber as the site-specific operating parameter which must be measured and recorded at least once every 15 minutes during the period in which the combustion device is functioning in achieving the HAP removal required by this subpart.

(A) The temperature monitoring device must be accurate to within  $\pm 0.75$  percent of the temperature measured in degrees Celsius or  $\pm 2.5^{\circ}\text{C}$ , whichever is greater.

(B) The monitoring device must be calibrated annually.

(viii) Catalytic incinerators. For each catalytic incinerator, the owner or operator shall monitor the temperature of the gas stream immediately before and after the catalyst bed. The owner or operator shall establish the minimum temperature of the gas stream immediately before the catalyst bed and the minimum temperature difference across the catalyst bed as the site-specific operating parameter which must be monitored and recorded at least once every 15 minutes during the period in which the catalytic incinerator is functioning in achieving the HAP removal required by this subpart.

(A) The temperature monitoring devices must be accurate to within  $\pm 0.75$  percent of the temperature measured in degrees Celsius or  $\pm 2.5^{\circ}\text{C}$ , whichever is greater.

(B) The temperature monitoring devices must be calibrated annually.

(ix) Process heaters and boilers.

(A) Except as specified in paragraph (b)(1)(ix)(B) of this section, for each boiler or process heater, the owner or operator shall establish the minimum temperature of the gases exiting the combustion chamber as the site-specific operating parameter which must be monitored and recorded at least once every 15 minutes during the period in which the boiler or process heater is functioning in achieving the HAP removal required by this subpart.

(1) The temperature monitoring device must be accurate to within  $\pm 0.75$  percent of the temperature measured in degrees Celsius or  $\pm 2.5^{\circ}\text{C}$ , whichever is greater.

(2) The temperature monitoring device must be calibrated annually.

(B) The owner or operator is exempt from the monitoring requirements specified in paragraph (b)(1)(ix)(A) of this section if either:

(1) All vent streams are introduced with primary fuel;  
or

(2) The design heat input capacity of the boiler or process heater is 44 megawatts or greater.

(x) Continuous emission monitor. As an alternative to the parameters specified in paragraphs (b)(1)(ii) through (ix) of this section, an owner or operator may monitor and record the outlet HAP concentration or both the outlet TOC concentration and outlet hydrogen halide and halogen concentration every 15 minutes during the period in which the control device is functioning in achieving the HAP removal required by this subpart. The owner or operator need not monitor the hydrogen halide and halogen concentration if, based on process knowledge, the owner or operator determines that the emission stream does not contain hydrogen halides or halogens. The HAP or TOC monitor must meet the requirements of Performance Specification 8 or 9 of appendix B of part 60 and must be installed, calibrated, and

maintained, according to § 63.8. As part of the QA/QC Plan, calibration of the device must include, at a minimum, quarterly cylinder gas audits.

(xi) CVS visual inspections. The owner or operator shall perform monthly visual inspections of each closed vent system as specified in § 63.1252(b).

(2) Averaging periods. Averaging periods for parametric monitoring levels shall be established according to paragraphs (b)(2)(i) through (iii) of this section.

(i) Except as provided in paragraph (b)(2)(iii) of this section, a daily (24-hour) or block average shall be calculated as the average of all values for a monitored parameter level set according to the procedures in (b)(3)(iii) of this section recorded during the operating day or block.

(ii) The operating day or block shall be defined in the Notification of Compliance Status report. The daily average may be from midnight to midnight or another continuous 24-hour period. The block average is limited to a period of time that is, at a maximum, equal to the time from the beginning to end of a batch process.

(iii) Monitoring values taken during periods in which the control devices are not functioning in controlling emissions, as indicated by periods of no flow, shall not be considered in the averages. Where flow to the device could be intermittent, the owner or operator shall install,

calibrate and operate a flow indicator at the inlet or outlet of the control device to identify periods of no flow.

(3) Procedures for setting parameter levels for control devices used to control emissions from process vents.

(i) Small control devices. Except as provided in paragraph (b)(1)(i) of this section, for devices controlling less than 10 tons per year of HAP for which a performance test is not required, the parametric levels shall be set based on the design evaluation required in § 63.1257(d)(3)(i). If a performance test is conducted, the monitoring parameter level shall be established according to the procedures in (b)(3)(ii) of this section.

(ii) Large control devices. For devices controlling greater than 10 tons per year of HAP for which a performance test is required, the parameter level must be established as follows:

(A) If the operating parameter level to be established is a maximum, it must be based on the average of the values from each of the three test runs.

(B) If the operating parameter level to be established is a minimum, it must be based on the average of the values from each of the three test runs.

(C) The owner or operator may establish the parametric monitoring level(s) based on the performance test supplemented by engineering assessments and manufacturer's



recommendations. Performance testing is not required to be conducted over the entire range of expected parameter values. The rationale for the specific level for each parameter, including any data and calculations used to develop the level(s) and a description of why the level indicates proper operation of the control device shall be provided in the Precompliance report. The procedures specified in this section have not been approved by the Administrator and determination of the parametric monitoring level using these procedures is subject to review and approval by the Administrator.

(iii) Parameters for control devices controlling batch process vents. For devices controlling batch process vents alone or in combination with other streams, the parameter level(s) shall be established in accordance with paragraph (b)(3)(iii)(A) or (B) of this section.

(A) If more than one batch emission episode has been selected to be controlled, a single level for the batch process(es) shall be determined from the initial compliance demonstration.

(B) Instead of establishing a single level for the batch process(es), as described in paragraph (b)(3)(iii)(A) of this section, an owner or operator may establish separate levels for each batch emission episode, selected to be controlled. If separate monitoring levels are established, the owner or operator must provide a record indicating at

what point in the daily schedule or log of processes required to be recorded per the requirements of § 63.1259(b)(9) the parameter being monitored changes levels and must record at least one reading of the new parameter level, even if the duration of monitoring for the new parameter is less than 15-minutes.

(4) Request approval to monitor alternative parameters. An owner or operator may request approval to monitor parameters other than those required by paragraphs (b)(1)(ii) through (ix) of this section. The request shall be submitted according to the procedures specified in § 63.8(f) or included in the Precompliance report.

(5) Monitoring for the alternative standards. For control devices that are used to comply with the provisions of § 63.1253(d) or 63.1254(c), the owner or operator shall monitor and record the outlet TOC concentration and the outlet hydrogen halide and halogen concentration every 15 minutes during the period in which the device is functioning in achieving the HAP removal required by this subpart. A TOC monitor meeting the requirements of Performance Specification 8 or 9 of appendix B of part 60 shall be installed, calibrated, and maintained, according to § 63.8. The owner or operator need not monitor the hydrogen halide and halogen concentration if, based on process knowledge, the owner or operator determines that the

emission stream does not contain hydrogen halides or halogens.

(6) Exceedances of operating parameters. An exceedance of an operating parameter is defined as one of the following:

(i) If the parameter, averaged over the operating day or block, is below a minimum value established during the initial compliance demonstration.

(ii) If the parameter, averaged over the operating day or block, is above the maximum value established during the initial compliance demonstration.

(iii) Each loss of pilot flame for flares.

(7) Excursions. Excursions are defined by either of the two cases listed in paragraphs (b)(7)(i) or (ii) of this section.

(i) When the period of control device operation is 4 hours or greater in an operating day and monitoring data are insufficient to constitute a valid hour of data, as defined in paragraph (b)(7)(iii) of this section, for at least 75 percent of the operating hours.

(ii) When the period of control device operation is less than 4 hours in an operating day and more than one of the hours during the period of operation does not constitute a valid hour of data due to insufficient monitoring data.

(iii) Monitoring data are insufficient to constitute a valid hour of data, as used in paragraphs (b)(7)(i) and (ii)

of this section, if measured values are unavailable for any of the required 15-minute periods within the hour.

(8) Violations. Exceedances of parameters monitored according to the provisions of paragraphs (b)(1)(ii) and (iv) through (ix) of this section or excursions as defined by paragraphs (b)(7)(i) through (iii) of this section constitute violations of the operating limit according to paragraphs (b)(8)(i), (ii), and (iv) of this section. Exceedances of the temperature limit monitored according to the provisions of paragraph (b)(1)(iii) of this section or exceedances of the outlet concentrations monitored according to the provisions of paragraph (b)(1)(x) of this section constitute violations of the emission limit according to paragraphs (b)(8)(i), (ii), and (iv) of this section. Exceedances of the outlet concentrations monitored according to the provisions of paragraph (b)(5) of this section constitute violations of the emission limit according to the provisions of paragraphs (b)(8)(iii) and (iv) of this section.

(i) Except as provided in paragraph (b)(8)(iv) of this section, for episodes occurring more than once per day, exceedances of established parameter limits or excursions will result in no more than one violation per operating day for each monitored item of equipment utilized in the process.

(ii) Except as provided in paragraph (b)(8)(iv) of this section, for control devices used for more than one process in the course of an operating day, exceedances or excursions will result in no more than one violation per operating day, per control device, for each process for which the control device is in service.

(iii) Except as provided in paragraph (b)(8)(iv) of this section, exceedances of the 20 ppmv TOC outlet emission limit, averaged over the operating day, will result in no more than one violation per day per control device. Except as provided in paragraph (b)(8)(iv) of this section, exceedances of the 20 ppmv hydrogen halide or halogen outlet emission limit, averaged over the operating day, will result in no more than one violation per day per control device.

(iv) Periods of time when monitoring measurements exceed the parameter values as well as periods of inadequate monitoring data do not constitute a violation if they occur during a startup, shutdown, or malfunction, and the facility follows its startup, shutdown, and malfunction plan.

(c) Monitoring for emission limits. The owner or operator of any affected source complying with the provisions of § 63.1254(a)(1) shall demonstrate continuous compliance with the 2,000 lb/yr emission limits by calculating daily a 365-day rolling summation of emissions. For owners and operators opting to switch compliance strategy from the 93 percent control requirement to the

2,000 lb/yr compliance method, as described in § 63.1254(a), the rolling average must include emissions from the past 365 days. Each day that the total emissions per process exceeds 2,000 lb/yr will be considered a violation of the emission limit.

(d) Monitoring for equipment leaks. The owner or operator of any affected source complying with the requirements of appendix A of this subpart shall meet the monitoring requirements described in the appendix.

(e) Pollution prevention. The owner or operator of any affected source that chooses to comply with the requirements of §§ 63.1252(e)(2) and (3) shall calculate a yearly rolling average of kg HAP consumption per kg production and kg VOC consumption per kg production every month or every 10 batches. Each rolling average kg/kg factor that exceeds the value established in § 63.1257(f)(1)(ii) will be considered a violation of the emission limit.

(f) Emissions averaging. The owner or operator of any affected source that chooses to comply with the requirements of § 63.1252(d) shall meet all monitoring requirements specified in paragraphs (b)(1) and (3) of this section, as applicable, for all processes and storage tanks included in the emissions average.

(g) Inspection and monitoring of waste management units and treatment processes.

(1) For each wastewater tank, surface impoundment, container, individual drain system, and oil-water separator that receives, manages, or treats wastewater, a residual removed from wastewater, a recycled wastewater, or a recycled residual removed from wastewater, the owner or operator shall comply with the inspection requirements specified in Table 7 of this subpart.

(2) For each biological treatment unit used to comply with § 63.1256(g), the owner or operator shall monitor TSS, BOD, and the biomass concentration at a frequency approved by the permitting authority and using methods approved by the permitting authority. The owner or operator may request approval to monitor other parameters. The request shall be submitted in the Precompliance report according to the procedures specified in § 63.1260(e), and shall include a description of planned reporting and recordkeeping procedures. The owner or operator shall include as part of the submittal the basis for the selected monitoring frequencies and the methods that will be used. The Administrator will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means.

(3) For nonbiological treatment units, the owner or operator shall request approval to monitor appropriate parameters that demonstrate proper operation of the selected treatment process. The request shall be submitted in the

Precompliance report according to the procedures specified in § 63.1260(e), and shall include a description of planned reporting and recordkeeping procedures. The Administrator will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means.

(h) Leak inspection provisions for vapor suppression equipment.

(1) Except as provided in paragraph (h)(9) of this section, for each vapor collection system, closed-vent system, fixed roof, cover, or enclosure required to comply with this section, the owner or operator shall comply with the requirements of paragraphs (h)(2) through (8) of this section.

(2) Except as provided in paragraphs (h)(6) and (7) of this section, each vapor collection system and closed-vent system shall be inspected according to the procedures and schedule specified in paragraphs (h)(2)(i) and (ii) of this section and each fixed roof, cover, and enclosure shall be inspected according to the procedures and schedule specified in paragraph (h)(2)(iii) of this section.

(i) If the vapor collection system or closed-vent system is constructed of hard-piping, the owner or operator shall:

(A) Conduct an initial inspection according to the procedures in paragraph (h)(3) of this section, and



(B) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.

(ii) If the vapor collection system or closed-vent system is constructed of ductwork, the owner or operator shall:

(A) Conduct an initial inspection according to the procedures in paragraph (h)(3) of this section, and

(B) Conduct annual inspections according to the procedures in paragraph (h)(3) of this section.

(C) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.

(iii) For each fixed roof, cover, and enclosure, the owner or operator shall:

(A) Conduct an initial inspection according to the procedures in paragraph (h)(3) of this section, and

(B) Conduct semiannual visual inspections for visible, audible, or olfactory indications of leaks.

(3) Each vapor collection system, closed-vent system, fixed roof, cover, and enclosure shall be inspected according to the procedures specified in paragraphs (h)(3)(i) through (v) of this section.

(i) Inspections shall be conducted in accordance with Method 21 of 40 CFR part 60, appendix A.

(ii) Detection instrument performance criteria.

(A) Except as provided in paragraph (h)(3)(ii)(B) of this section, the detection instrument shall meet the

performance criteria of Method 21 of 40 CFR part 60, appendix A, except the instrument response factor criteria in section 3.1.2(a) of Method 21 shall be for the average composition of the process fluid not each individual VOC in the stream. For process streams that contain nitrogen, air, or other inerts which are not organic HAP or VOC, the average stream response factor shall be calculated on an inert-free basis.

(B) If no instrument is available at the plant site that will meet the performance criteria specified in paragraph (h)(3)(ii)(A) of this section, the instrument readings may be adjusted by multiplying by the average response factor of the process fluid, calculated on an inert-free basis as described in paragraph (h)(3)(ii)(A) of this section.

(iii) The detection instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, appendix A.

(iv) Calibration gases shall be as follows:

(A) Zero air (less than 10 parts per million hydrocarbon in air); and

(B) Mixtures of methane in air at a concentration less than 10,000 parts per million. A calibration gas other than methane in air may be used if the instrument does not respond to methane or if the instrument does not meet the performance criteria specified in paragraph (h)(2)(ii)(A) of

this section. In such cases, the calibration gas may be a mixture of one or more of the compounds to be measured in air.

(v) An owner or operator may elect to adjust or not adjust instrument readings for background. If an owner or operator elects to not adjust readings for background, all such instrument readings shall be compared directly to the applicable leak definition to determine whether there is a leak. If an owner or operator elects to adjust instrument readings for background, the owner or operator shall measure background concentration using the procedures in § 63.180(b) and (c). The owner or operator shall subtract background reading from the maximum concentration indicated by the instrument.

(vi) The background level shall be determined according to the procedures in Method 21 of 40 CFR part 60 appendix A.

(vii) The arithmetic difference between the maximum concentration indicated by the instrument and the background level shall be compared with 500 parts per million for determining compliance.

(4) Leaks, as indicated by an instrument reading greater than 500 parts per million above background or by visual inspections, shall be repaired as soon as practicable, except as provided in paragraph (h)(5) of this section.

(i) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

(ii) Repair shall be completed no later than 15 calendar days after the leak is detected, except as provided in paragraph (h)(4)(iii) of this section.

(iii) For leaks found in vapor collection systems used for transfer operations, repairs shall be completed no later than 15 calendar days after the leak is detected or at the beginning of the next transfer loading operation, whichever is later.

(5) Delay of repair of a vapor collection system, closed-vent system, fixed roof, cover, or enclosure for which leaks have been detected is allowed if the repair is technically infeasible without a shutdown, as defined in § 63.1251, or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next shutdown.

(6) Any parts of the vapor collection system, closed-vent system, fixed roof, cover, or enclosure that are designated, as described in paragraph (h)(8)(i) of this section, as unsafe to inspect are exempt from the inspection requirements of paragraphs (h)(2)(i), (ii), and (iii) of this section if:

(i) The owner or operator determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with paragraphs (h)(2)(i), (ii), or (iii) of this section; and

(ii) The owner or operator has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.

(7) Any parts of the vapor collection system, closed-vent system, fixed roof, cover, or enclosure that are designated, as described in paragraph (h)(8)(ii) of this section, as difficult to inspect are exempt from the inspection requirements of paragraphs (h)(2)(i), (ii), and (iii)(A) of this section if:

(i) The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and

(ii) The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years.

(8) Records shall be maintained as specified in § 63.1259(i)(4) through (9).

(9) If a closed-vent system subject to this section is also subject to the equipment leak provisions of § 63.1255, the owner or operator shall comply with the provisions of

§ 63.1255 and is exempt from the requirements of this section.

§ 63.1259 Recordkeeping Requirements.

(a) Requirements of subpart A of this part. The owner or operator of an affected source shall comply with the recordkeeping requirements in subpart A of this part as specified in Table 1 of this subpart and in paragraphs (a)(1) through (5) of this section.

(1) Data retention. Each owner or operator of an affected source shall keep copies of all records and reports required by this subpart for at least 5 years, as specified in § 63.10(b)(1).

(2) Records of applicability determinations. The owner or operator of a stationary source that is not subject to this subpart shall keep a record of the applicability determination, as specified in § 63.10(b)(3).

(3) Startup, shutdown, and malfunction plan. The owner or operator of an affected source shall develop and implement a written startup, shutdown, and malfunction plan as specified in § 63.6(e)(3). This plan shall describe, in detail, procedures for operating and maintaining the affected source during periods of startup, shutdown, and malfunction and a program for corrective action for malfunctioning process, air pollution control, and monitoring equipment used to comply with this subpart. The owner or operator of an affected source shall keep the

current and superseded versions of this plan onsite, as specified in § 63.6(e)(3)(v). The owner or operator shall keep the startup, shutdown, and malfunction records specified in paragraphs (b)(3)(i) through (iii) of this section. Reports related to the plan shall be submitted as specified in § 63.1260(i).

(i) The owner or operator shall record the occurrence and duration of each malfunction of air pollution control equipment used to comply with this subpart, as specified in § 63.6(e)(3)(iii).

(ii) The owner or operator shall record the occurrence and duration of each malfunction of continuous monitoring systems used to comply with this subpart.

(iii) For each startup, shutdown, or malfunction, the owner or operator shall record all information necessary to demonstrate that the procedures specified in the affected source's startup, shutdown, and malfunction plan were followed, as specified in § 63.6(e)(3)(iii); alternatively, the owner or operator shall record any actions taken that are not consistent with the plan, as specified in § 63.6(e)(3)(iv).

(4) Recordkeeping requirements for sources with continuous monitoring systems. The owner or operator of an affected source who elects to install a continuous monitoring system shall maintain records specified in § 63.10(c)(1) through (14).

(5) Application for approval of construction or reconstruction. For new affected sources, each owner or operator shall comply with the provisions in § 63.5 regarding construction and reconstruction, excluding the provisions specified in § 63.5(d)(1)(ii)(H), (d)(2), and (d)(3)(ii).

(b) Records of equipment operation. The owner or operator must keep the following records up-to-date and readily accessible:

(1) Each measurement of a control device operating parameter monitored in accordance with § 63.1258 and each measurement of a treatment process parameter monitored in accordance with § 63.1258(g)(2) and (3).

(2) For processes subject to § 63.1252(e), records of consumption, production, and the rolling average values of the production-indexed HAP and VOC consumption factors.

(3) For each continuous monitoring system used to comply with this subpart, records documenting the completion of calibration checks and maintenance of continuous monitoring systems.

(4) For processes in compliance with the 2,000 lb/yr emission limit of § 63.1254(a)(1), records of the rolling annual total emissions.

(5) Records of the following, as appropriate:

(i) The number of batches per year for each batch process.



(ii) The operating hours per year for continuous processes.

(6) Uncontrolled and controlled emissions per batch for each process.

(7) Wastewater concentration per POD or process.

(8) Number of storage tank turnovers per year, if used in an emissions average.

(9) Daily schedule or log of each operating scenario prior to its operation.

(10) Description of worst-case operating conditions as determined using the procedures described in § 63.1257(b)(8) for control devices.

(11) Periods of planned routine maintenance as described in § 63.1257 (c)(5).

(c) Records of operating scenarios. The owner or operator of an affected source shall keep records of each operating scenario which demonstrates compliance with this subpart.

(d) Records of equipment leak detection and repair programs. The owner or operator of any affected source implementing the leak detection and repair (LDAR) program specified in appendix A of this subpart, shall implement the recordkeeping requirements in appendix A of this subpart.

(e) Records of emissions averaging. The owner or operator of any affected source that chooses to comply with the requirements of § 63.1252(d) shall maintain up-to-date records of the following information:

(1) An Implementation Plan which shall include in the plan, for all process vents and storage tanks included in each of the averages, the information listed in paragraphs (e)(1)(i) through (v) of this section.

(i) The identification of all process vents and storage tanks in each emissions average.

(ii) The uncontrolled and controlled emissions of HAP and the overall percent reduction efficiency as determined in §§ 63.1257(g)(1) through (4) or 63.1257(h)(1) through (3) as applicable.

(iii) The calculations used to obtain the uncontrolled and controlled HAP emissions and the overall percent reduction efficiency.

(iv) The estimated values for all parameters required to be monitored under § 63.1258(f) for each process and storage tank included in an average.

(v) A statement that the compliance demonstration, monitoring, inspection, recordkeeping and reporting provisions in §§ 63.1257(g) and (h), 63.1258(f), and 63.1260(k) that are applicable to each emission point in the emissions average will be implemented beginning on the date of compliance.

(2) The Implementation Plan must demonstrate that the emissions from the processes and storage tanks proposed to be included in the average will not result in greater hazard or, at the option of the operating permit authority, greater risk to human health or the environment than if the storage tanks and process vents were controlled according to the provisions in §§ 63.1253 and 63.1254, respectively.

(i) This demonstration of hazard or risk equivalency shall be made to the satisfaction of the operating permit authority.

(A) The Administrator may require owners and operators to use specific methodologies and procedures for making a hazard or risk determination.

(B) The demonstration and approval of hazard or risk equivalency shall be made according to any guidance that the Administrator makes available for use or any other technically sound information or methods.

(ii) An emissions averaging plan that does not demonstrate hazard or risk equivalency to the satisfaction of the Administrator shall not be approved. The Administrator may require such adjustments to the emissions averaging plan as are necessary in order to ensure that the average will not result in greater hazard or risk to human health or the environment than would result if the emission points were controlled according to §§ 63.1253 and 63.1254.

(iii) A hazard or risk equivalency demonstration must:

(A) Be a quantitative, comparative chemical hazard or risk assessment;

(B) Account for differences between averaging and non-averaging options in chemical hazard or risk to human health or the environment; and

(C) Meet any requirements set by the Administrator for such demonstrations.

(3) Records as specified in paragraphs (a), (b) and (d) of this section.

(4) A rolling quarterly calculation of the annual percent reduction efficiency as specified in § 63.1257(g) and (h).

(f) Records of delay of repair. Documentation of a decision to use a delay of repair due to unavailability of parts, as specified in § 63.1256(i), shall include a description of the failure, the reason additional time was necessary (including a statement of why replacement parts were not kept onsite and when delivery from the manufacturer is scheduled), and the date when the repair was completed.

(g) Record of wastewater stream or residual transfer. The owner or operator transferring an affected wastewater stream or residual removed from an affected wastewater stream in accordance with § 63.1256(a)(5) shall keep a record of the notice sent to the treatment operator stating that the wastewater stream or residual contains organic HAP

which are required to be managed and treated in accordance with the provisions of this subpart.

(h) Records of extensions. The owner or operator shall keep documentation of a decision to use an extension, as specified in § 63.1256(b)(6)(ii) or (b)(9), in a readily accessible location. The documentation shall include a description of the failure, documentation that alternate storage capacity is unavailable, and specification of a schedule of actions that will ensure that the control equipment will be repaired and the tank will be emptied as soon as practical.

(i) Records of inspections. The owner or operator shall keep records specified in paragraphs (i)(1) through (9) of this section.

(1) A record that each waste management unit inspection required by § 63.1256(b) through (f) was performed.

(2) A record that each inspection for control devices required by § 63.1256(h) was performed.

(3) A record of the results of each seal gap measurement required by § 63.1256(b)(5) and (f)(3). The records shall include the date of measurement, the raw data obtained in the measurement, and the calculations described in § 63.120(b)(2) through (4).

(4) Records identifying all parts of the vapor collection system, closed-vent system, fixed roof, cover, or

enclosure that are designated as unsafe to inspect in accordance with § 63.1258(h)(6), an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment.

(5) Records identifying all parts of the vapor collection system, closed-vent system, fixed roof, cover, or enclosure that are designated as difficult to inspect in accordance with § 63.1258(h)(7), an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment.

(6) For each vapor collection system or closed-vent system that contains bypass lines that could divert a vent stream away from the control device and to the atmosphere, the owner or operator shall keep a record of the information specified in either paragraph (i)(6)(i) or (ii) of this section.

(i) Hourly records of whether the flow indicator specified under § 63.1252(b)(1) was operating and whether a diversion was detected at any time during the hour, as well as records of the times and durations of all periods when the vent stream is diverted from the control device or the flow indicator is not operating.

(ii) Where a seal mechanism is used to comply with § 63.1252(b)(2), hourly records of flow are not required. In such cases, the owner or operator shall record that the monthly visual inspection of the seals or closure mechanisms

has been done, and shall record the occurrence of all periods when the seal mechanism is broken, the bypass line valve position has changed, or the key for a lock-and-key type lock has been checked out, and records of any car-seal that has broken.

(7) For each inspection conducted in accordance with § 63.1258(h)(2) and (3) during which a leak is detected, a record of the information specified in paragraphs (i)(7)(i) through (viii) of this section.

(i) The instrument identification numbers; operator name or initials; and identification of the equipment.

(ii) The date the leak was detected and the date of the first attempt to repair the leak.

(iii) Maximum instrument reading measured by the method specified in § 63.1258(h)(4) after the leak is successfully repaired or determined to be nonrepairable.

(iv) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(v) The name, initials, or other form of identification of the owner or operator (or designee) whose decision it was that repair could not be effected without a shutdown.

(vi) The expected date of successful repair of the leak if a leak is not repaired within 15 calendar days.

(vii) Dates of shutdowns that occur while the equipment is unrepaired.

(viii) The date of successful repair of the leak.

(8) For each inspection conducted in accordance with § 63.1258(h)(3) during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(9) For each visual inspection conducted in accordance with § 63.1258(h)(2)(i)(B) or (h)(2)(iii)(B) of this section during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

§ 63.1260 Reporting Requirements.

(a) The owner or operator of an affected source shall comply with the reporting requirements of paragraphs (b) through (l) of this section. Applicable reporting requirements of §§ 63.9 and 63.10 are also summarized in Table 1 of this subpart.

(b) Initial notification. The owner or operator shall submit the applicable initial notification in accordance with § 63.9(b) or (d).

(c) Application for approval of construction or reconstruction. An owner or operator who is subject to § 63.5(b)(3) shall submit to the Administrator an application for approval of the construction of a new major affected source, the reconstruction of a major affected



source, or the reconstruction of a major source such that the source becomes a major affected source subject to the standards. The application shall be prepared in accordance with § 63.5(d).

(d) Notification of CMS performance evaluation. An owner or operator who is required by the Administrator to conduct a performance evaluation for a continuous monitoring system shall notify the Administrator of the date of the performance evaluation as specified in § 63.8(e)(2).

(e) Precompliance report. The Precompliance report shall be submitted at least 6 months prior to the compliance date of the standard. For new sources, the Precompliance report shall be submitted to the Administrator with the application for approval of construction or reconstruction. The Administrator shall have 90 days to approve or disapprove the plan. The plan shall be considered approved if the Administrator either approves the plan in writing, or fails to disapprove the plan in writing. The 90 day period shall begin when the Administrator receives the request. If the request is denied, the owner or operator must still be in compliance with the standard by the compliance date. To change any of the information submitted in the report, the owner or operator shall notify the Administrator 90 days before the planned change is to be implemented; the change shall be considered approved if the Administrator either

approves the change in writing, or fails to disapprove the change in writing. The Precompliance report shall include:

(1) Requests for approval to use alternative monitoring parameters or requests to set monitoring parameters according to § 63.1258(b)(4).

(2) Descriptions of the daily or per batch demonstrations to verify that control devices subject to § 63.1258(b)(1)(i) are operating as designed.

(3) A description of test conditions, and the corresponding monitoring parameter values for parameters that are set according to § 63.1258(b)(3)(ii)(C).

(4) For owners and operators complying with the requirements of § 63.1252(e), the P2 demonstration summary required in § 63.1257(f).

(5) Data and rationale used to support an engineering assessment to calculate uncontrolled emissions from process vents as required in § 63.1257(d)(2)(ii).

(f) Notification of Compliance Status report. The Notification of Compliance Status report required under § 63.9 shall be submitted no later than 150 days after the compliance date and shall include:

(1) The results of any applicability determinations, emission calculations, or analyses used to identify and quantify HAP emissions from the affected source.

(2) The results of emissions profiles, performance tests, engineering analyses, design evaluations, or calcula-

tions used to demonstrate compliance. For performance tests, results should include descriptions of sampling and analysis procedures and quality assurance procedures.

(3) Descriptions of monitoring devices, monitoring frequencies, and the values of monitored parameters established during the initial compliance determinations, including data and calculations to support the levels established.

(4) Listing of all operating scenarios.

(5) Descriptions of worst-case operating and/or testing conditions for control devices.

(6) Identification of emission points subject to overlapping requirements described in § 63.1250(h) and the authority under which the owner or operator will comply.

(g) Periodic reports. An owner or operator shall prepare Periodic reports in accordance with paragraphs (g)(1) and (2) of this section and submit them to the Administrator.

(1) Submittal schedule. Except as provided in (g)(1)(i), (ii) and (iii) of this section, an owner or operator shall submit Periodic reports semiannually, beginning 60 operating days after the end of the applicable reporting period. The first report shall be submitted no later than 240 days after the date the Notification of Compliance Status is due and shall cover the 6-month period

beginning on the date the Notification of Compliance Status is due.

(i) When the Administrator determines on a case-by-case basis that more frequent reporting is necessary to accurately assess the compliance status of the affected source; or

(ii) When the monitoring data are used directly for compliance determination and the source experience excess emissions, in which case quarterly reports shall be submitted. Once an affected source reports excess emissions, the affected source shall follow a quarterly reporting format until a request to reduce reporting frequency is approved. If an owner or operator submits a request to reduce the frequency of reporting, the provisions in § 63.10(e)(ii) and (iii) shall apply, except that the term "excess emissions and continuous monitoring system performance report and/or summary report" shall mean "Periodic report" for the purposes of this section.

(iii) When a new operating scenario has been operated since the last report, in which case quarterly reports shall be submitted.

(2) Content of Periodic report. The owner or operator shall include the information in paragraphs (g)(2)(i) through (vii) of this section, as applicable.

(i) Each Periodic report must include the information in § 63.10(e)(vi)(A) through (I) and (K) through (M). For

each continuous monitoring system, the Periodic report must also include the information in § 63.10(e)(vi)(J).

(ii) If the total duration of excess emissions, parameter exceedances, or excursions for the reporting period is 1 percent or greater of the total operating time for the reporting period, or the total continuous monitoring system downtime for the reporting period is 5 percent or greater of the total operating time for the reporting period, the Periodic report must include the information in paragraphs (g)(2)(ii)(A) through (D) of this section.

(A) Monitoring data, including 15-minute monitoring values as well as daily average values of monitored parameters, for all operating days when the average values were outside the ranges established in the Notification of Compliance Status report or operating permit.

(B) Duration of excursions, as defined in § 63.1258(b)(7).

(C) Operating logs and operating scenarios for all operating scenarios for all operating days when the values are outside the levels established in the Notification of Compliance Status report or operating permit.

(D) When a continuous monitoring system is used, the information required in § 63.10(c)(5) through (13).

(iii) For each inspection conducted in accordance with § 63.1258(h)(2) or (3) during which a leak is detected, the

records specified in § 63.1259(i)(7) must be included in the next Periodic report.

(iv) For each vapor collection system or closed vent system with a bypass line subject to § 63.1252(b)(1), records required under § 63.1259(i)(6)(i) of all periods when the vent stream is diverted from the control device through a bypass line. For each vapor collection system or closed vent system with a bypass line subject to § 63.1252(b)(2), records required under § 63.1259(i)(6)(ii) of all periods in which the seal mechanism is broken, the bypass valve position has changed, or the key to unlock the bypass line valve was checked out.

(v) The information in paragraphs (g)(2)(iv)(A) through (D) of this section shall be stated in the Periodic report, when applicable.

(A) No excess emissions.

(B) No exceedances of a parameter.

(C) No excursions.

(D) No continuous monitoring system has been inoperative, out of control, repaired, or adjusted.

(vi) For each tank subject to control requirements, periods of planned routine maintenance during which the control device does not meet the specifications of §63.1253(b) through (d).

(vii) Each new operating scenario which has been operated since the time period covered by the last Periodic

report. For the initial Periodic report, each operating scenario for each process operated since the compliance date shall be submitted.

(h) Notification of process change.

(1) Except as specified in paragraph (h)(2) of this section, whenever a process change is made, or a change in any of the information submitted in the Notification of Compliance Status Report, the owner or operator shall submit a report quarterly. The report may be submitted as part of the next Periodic report required under paragraph (g) of this section. The report shall include:

(i) A brief description of the process change.

(ii) A description of any modifications to standard procedures or quality assurance procedures.

(iii) Revisions to any of the information reported in the original Notification of Compliance Status Report under paragraph (f) of this section.

(iv) Information required by the Notification of Compliance Status Report under paragraph (f) of this section for changes involving the addition of processes or equipment.

(2) An owner or operator must submit a report 60 days before the scheduled implementation date of either of the following:

(i) Any change in the activity covered by the Precompliance report.

(ii) A change in the status of a control device from small to large.

(i) Reports of startup, shutdown, and malfunction.

For the purposes of this subpart, the startup, shutdown, and malfunction reports shall be submitted on the same schedule as the periodic reports required under paragraph (g) of this section instead of the schedule specified in

§ 63.10(d)(5)(i). These reports shall include the information specified in § 63.1259(a)(3)(i) through (iii) and shall contain the name, title, and signature of the owner or operator or other responsible official who is certifying its accuracy. Reports are only required if a startup, shutdown, or malfunction occurred during the reporting period. Any time an owner or operator takes an action that is not consistent with the procedures specified in the affected source's startup, shutdown, and malfunction plan, the owner or operator shall submit an immediate startup, shutdown, and malfunction report as specified in § 63.10(d)(4)(ii).

(j) Reports of LDAR programs. The owner or operator of any affected source implementing the LDAR program specified in appendix GGGA shall implement the reporting requirements in § GGGA-9 of appendix A of this subpart. Copies of all reports shall be retained as records for a period of 5 years, in accordance with the requirements of § 63.10(b)(1).



(k) Reports of emissions averaging. The owner or operator of any affected source that chooses to comply with the requirements of § 63.1252(d) shall submit the implementation plan described in § 63.1259(e) 6 months prior to the compliance date of the standard and the following information in the periodic reports:

(i) The records specified in § 63.1259(e) for each process or storage tank included in the emissions average;

(ii) All information as specified in paragraph (g) of this section for each process or storage tank included in the emissions average;

(iii) Any changes of the processes or storage tanks included in the average.

(iv) The calculation of the overall percent reduction efficiency for the reporting period.

(v) Changes to the Implementation Plan which affect the calculation methodology of uncontrolled or controlled emissions or the hazard or risk equivalency determination.

(vi) Every second semiannual or fourth quarterly report, as appropriate, shall include the results according to § 63.1259(e)(4) to demonstrate the emissions averaging provisions of §§ 63.1252(d), 63.1257(g) and (h), 63.1258(f), and 63.1259(f) are satisfied.

(l) Notification of performance test and test plan. The owner or operator of an affected source shall notify the Administrator of the planned date of a performance test at

least 60 days before the test in accordance with § 63.7(b). The owner or operator also must submit the test plan required by § 63.7(c) and the emission profile required by 63.1257(b)(8)(ii) with the notification of the performance test.

(m) Request for extension of compliance. An owner or operator may submit to the Administrator a request for an extension of compliance in accordance with § 63.1250(f)(4). § 63.1261 Delegation of Authority.

(a) In delegating implementation and enforcement authority to a State under § 112(d) of the Clean Air Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) The authority conferred in § 63.177; the authority to approve applications for determination of equivalent means of emission limitation; and the authority to approve alternative test methods shall not be delegated to any State.

TABLE 1 TO SUBPART GGG. GENERAL PROVISIONS APPLICABILITY  
TO SUBPART GGG

General Provisions reference	Summary of requirements	Applies to subpart GGG	Comments
63.1(a)(1)	General applicability of the General Provisions.	Yes	Additional terms defined in § 63.1251; when overlap between subparts A and GGG of this part, subpart GGG takes precedence.
63.1(a)(2-7)		Yes	
63.1(a)(8)		No	Discusses state programs.
63.1(a)(9-14)		Yes	
63.1(b)(1)	Initial applicability determination.	Yes	Subpart GGG clarifies the applicability in § 63.1250.
63.1(b)(2)	Title V operating permit - see part 70.	Yes	All major affected sources are required to obtain a title V permit.
63.1(b)(3)	Record of the applicability determination.	Yes	All affected sources are subject to subpart GGG according to the applicability definition of subpart GGG.
63.1(c)(1)	Applicability after standards are set.	Yes	Subpart GGG clarifies the applicability of each paragraph of subpart A to sources subject to subpart GGG.
63.1(c)(2)	Title V permit requirement.	No	All major affected sources are required to obtain a title V permit. Area sources are not subject to subpart GGG.
63.1(c)(3)	Reserved.		
63.1(c)(4)	Requirements for existing source that obtains an extension of compliance.	Yes	
63.1(c)(5)	Notification requirements for an area source that increases HAP emissions to major source levels.	Yes	

TABLE 1. (continued)

General Provisions reference	Summary of requirements	Applies to subpart GGG	Comments
63.1(d)	[Reserved]	NA	
63.1(e)	Applicability of permit program before a relevant standard has been set.	Yes	
63.2	Definitions.	Yes	Additional terms defined in § 63.1251; when overlap between subparts A and GGG of this part occurs, subpart GGG takes precedence.
63.3	Units and abbreviations.	Yes	Other units used in subpart GGG are defined in that subpart.
63.4	Prohibited activities.	Yes	
63.5(a)	Construction and reconstruction - applicability.	Yes	Except replace the terms "source" and "stationary source" with "affected source".
63.5(b)(1)	Upon construction, relevant standards for new sources.	Yes	
63.5(b)(2)	[Reserved]	NA	
63.5(b)(3)	New construction/reconstruction.	Yes	
63.5(b)(4)	Construction/reconstruction notification.	Yes	
63.5(b)(5)	Construction/reconstruction compliance.	Yes	
63.5(b)(6)	Equipment addition or process change.	Yes	
63.5(c)	[Reserved]	NA	
63.5(d)	Application for approval of construction/reconstruction.	Yes	Except for certain provisions identified in 63.1259(a)(5)
63.5(e)	Construction/reconstruction approval.	Yes	
63.5(f)	Construction/reconstruction approval based on prior State review.	Yes	Except replace "source" with "affected source".
63.6(a)(1)	Compliance with standards and maintenance requirements.	Yes	
63.6(a)(2)	Requirements for area source that increases emissions to become major.	Yes	

TABLE 1. (continued)

General Provisions reference	Summary of requirements	Applies to subpart GGG	Comments
63.6(b)(1-2)	Compliance dates for new and reconstructed sources.	No	Subpart GGG specifies compliance dates.
63.6(b)(3-6)	Compliance dates for area sources that become major sources	Yes	
63.6 (b)(7)	Compliance dates for new sources resulting from new unaffected area sources becoming subject to standards	No	Subpart GGG specifies NS applicability and compliance dates
63.6(c)	Compliance dates for existing sources.	Yes	Except replace "source" with "affected source". Subpart GGG specifies compliance dates.
63.6(e)	Operation and maintenance requirements.	Yes	Startup, Shutdown, Malfunction Plan requirements specifically include malfunction process, control and monitoring equipment.
63.6(f)-(g)	Compliance with nonopacity and alternative nonopacity emission standards	Yes	Except that subpart GGG specifies performance test conditions.
63.6(h)	Opacity and visible emission standards.	No	Subpart GGG does not contain any opacity or visible emission standards.
63.6(i)	Extension of compliance with emission standards.	No	§ 63.1250(f)(4) specifies provisions for compliance extensions.
63.6(j)	Exemption from compliance with emission standards.	Yes	

TABLE 1. (continued)

General Provisions reference	Summary of requirements	Applies to subpart GGG	Comments
63.7(a)(1)	Performance testing requirements.	Yes	Subpart GGG specifies required testing and compliance procedures.
63.7(a)(2)(I-ix)		Yes	
63.7(a)(3)		Yes	
63.7(b)(1)	Notification of performance test.	Yes	
63.7(b)(2)	Notification of delay in conducting a scheduled performance test.	Yes	
63.7(c)	Quality assurance program.	Yes	Except that the test plan must be submitted with the notification of the performance test
63.7(d)	Performance testing facilities.	Yes	Except replace "source" with "affected source".
63.7(e)	Conduct of performance tests.	Yes	Subpart GGG also contains test methods and procedures specific to pharmaceutical sources.
63.7(f)	Use of alternative test method.	Yes	
63.7(g)	Data analysis, recordkeeping, and reporting.	Yes	
63.7(h)	Waiver of performance tests.	Yes	
63.8(a)	Monitoring requirements.	Yes	See § 63.1258.
63.8(b)(1)	Conduct of monitoring.	Yes	
63.8(b)(2)	CMS and combined effluents.	No	§ 63.1258 of subpart GGG provides specific CMS requirements.
63.8(b)(3)-(c)(3)	CMS requirements.	Yes	
63.8(c)(4-5)	CMS operation requirements.	Yes	
63.8(c)(6-8)	CMS calibration and malfunction provisions	Yes	
63.8(d)	CMS quality control program.	Yes	
63.8(e)(1)	Performance evaluations of CMS.	Yes	
63.8(e)(2)	Notification of performance evaluation.	Yes	
63.8(e)(3-4)	CMS requirements/alternatives.	Yes	

TABLE 1. (continued)

General Provisions reference	Summary of requirements	Applies to subpart GGG	Comments
63.8(e)(5)(i)	Reporting performance evaluation results.	Yes	See § 63.1260 (a)
63.8(e)(5)(ii)	Results of COMS performance evaluation.	No	Subpart GGG does not contain any opacity or visible emission standards.
63.8(f)-(g)	Alternative monitoring method/reduction of monitoring data.	Yes	
63.9(a)-(d)	Notification requirements - Applicability and general information.	Yes	
63.9(e)	Notification of performance test.	Yes	
63.9(f)	Notification of opacity and visible emissions observations.	No	Subpart GGG does not contain any opacity or visible emission standards.
63.9(g)(1)	Additional notification requirements for sources with CMS.	Yes	
63.9(g)(2)	Notification of compliance with opacity emission standard.	No	Subpart GGG does not contain any opacity or visible emission standards.
63.9(g)(3)	Notification that criterion to continue use of alternative to relative accuracy testing has been exceeded.	Yes	
63.9(h)	Notification of compliance status.	Yes	Due 150 days after compliance date.
63.9(i)	Adjustment to time periods or postmark deadlines for submittal and review of required communications.	Yes	
63.9(j)	Change in information provided.	Yes	
63.10(a)	Recordkeeping requirements.	Yes	See § 63.1259.
63.10(b)(1)	Records retention.	Yes	
63.10(b)(2)	Information and documentation to support notifications.	No	Subpart GGG specifies recordkeeping requirements.
63.10(b)(3)	Records retention for sources not subject to relevant standard.	Yes	Applicability requirements are given in § 63.1250.

TABLE 1. (continued)

General Provisions reference	Summary of requirements	Applies to subpart GGG	Comments
63.10(c)-(d)(2)	Other recordkeeping and reporting provisions.	Yes	
63.10(d)(3)	Reporting results of opacity or visible emissions observations.	No	Subpart GGG does not include any opacity or visible emission standards.
63.10(d)(4-5)	Other recordkeeping and reporting provisions.	Yes	
63.10(e)	Additional CMS reporting requirements.	Yes	
63.10(f)	Waiver of recordkeeping or reporting requirements.	Yes	
63.11	Control device requirements for flares.	Yes	
63.12	State authority and delegations.	Yes	See § 63.1261
63.13	Addresses of State air pollution control agencies.	Yes	
63.14	Incorporations by reference.	Yes	
63.15	Availability of information and confidentiality.	Yes	



TABLE 2 TO SUBPART GGG. PARTIALLY SOLUBLE HAP

1,1,1-Trichloroethane (methyl chloroform)	Dichloroethyl ether
1,1,2,2-Tetrachloroethane	Dinitrophenol
1,1,2-Trichloroethane	Epichlorohydrin
1,1-Dichloroethylene (vinylidene chloride)	Ethyl acrylate
1,2-Dibromoethane	Ethylbenzene
1,2-Dichloroethane (ethylene dichloride)	Ethylene oxide
1,2-Dichloropropane	Hexachlorobenzene
1,3-Dichloropropene	Hexachlorobutadiene
2,4,5-Trichlorophenol	Hexachloroethane
2-Butanone (mek)	Methyl methacrylate
1,4-Dichlorobenzene	Methyl-t-butyl ether
2-Nitropropane	Methylene chloride
4-Methyl-2-pentanone (mibk)	N,N-dimethylaniline
Acetaldehyde	Propionaldehyde
Acrolein	Propylene oxide
Acrylonitrile	Styrene
Allyl chloride	Tetrachloroethene
Benzene	(perchloroethylene)
Benzyl chloride	Tetrachloromethane (carbon tetrachloride)
Biphenyl	Toluene
Bromoform (tribromomethane)	Trichlorobenzene (1,2,4-)
Bromomethane	Trichloroethylene
Butadiene	Triethylamine
Carbon disulfide	Trimethylpentane
Chlorobenzene	Vinyl acetate
Chloroethane (ethyl chloride)	Vinyl chloride
Chloroform	Xylene (m)
Chloromethane	Xylene (o)
Chloroprene	Xylene (p)
Cumene	N-hexane

TABLE 3 TO SUBPART GGG. SOLUBLE HAP

Compound
1,1-Dimethylhydrazine
1,4-Dioxane
Acetonitrile
Acetophenone
Diethyl sulfate
Dimethyl sulfate
Dinitrotoluene
Ethylene glycol dimethyl ether
Ethylene glycol monobutyl ether acetate
Ethylene glycol monomethyl ether acetate
Isophorone
Methanol (methyl alcohol)
Nitrobenzene
Toluidene

TABLE 4 TO SUBPART GGG. MONITORING REQUIREMENTS FOR CONTROL DEVICES<sup>a</sup>

Control device	Monitoring equipment required	Parameters to be monitored	Frequency
All control devices	1. Flow indicator installed at all bypass lines to the atmosphere and equipped with continuous recorder <u>or</u>	1. Presence of flow diverted from the control device to the atmosphere <u>or</u>	Hourly records of whether the flow indicator was operating and whether a diversion was detected at any time during each hour
	2. Valves sealed closed with car-seal or lock-and-key configuration	2. Monthly inspections of sealed valves	Monthly
Scrubber	Liquid flow rate or pressure drop mounting device. Also a pH monitor if the scrubber is used to control acid emissions.	1. Liquid flow rate into or out of the scrubber or the pressure drop across the scrubber.	1. Every 15 minutes
		2. pH of effluent scrubber liquid	2. Once a day
Thermal incinerator	Temperature monitoring device installed in firebox or in ductwork immediately downstream of firebox <sup>b</sup>	Firebox temperature	Every 15 minutes
Catalytic incinerator	Temperature monitoring device installed in gas stream immediately before and after catalyst bed	Temperature difference across catalyst bed	Every 15 minutes
Flare	Heat sensing device installed at the pilot light	Presence of a flame at the pilot light	Every 15 minutes
Boiler or process heater <44 megawatts and vent stream is not mixed with the primary fuel	Temperature monitoring device installed in firebox <sup>b</sup>	Combustion temperature	Every 15 minutes
Condenser	Temperature monitoring device installed at condenser exit	Condenser exit (product side) temperature	Every 15 minutes

TABLE 4. (continued)

Control device	Monitoring equipment required	Parameters to be monitored	Frequency
Carbon adsorber (nonregenerative)	None	Operating time since last replacement	N/A
Carbon adsorber (regenerative)	Stream flow monitoring device, <u>and</u>  Carbon bed temperature monitoring device	1. Total regeneration stream mass or volumetric flow during carbon bed regeneration cycle(s)	1. For each regeneration cycle, record the total regeneration stream mass or volumetric flow
		2. Temperature of carbon bed after regeneration	2. For each regeneration cycle, record the maximum carbon bed-temperature
		3. Temperature of carbon bed within 15 minutes of completing any cooling cycle(s)	3. Within 15 minutes of completing any cooling cycle, record the carbon bed temperature
		4. Operating time since end of last regeneration	4. Operating time to be based on worst-case conditions
		5. Check for bed poisoning	5. Yearly

<sup>a</sup>As an alternative to the monitoring requirements specified in this table, the owner or operator may use a CEM meeting the requirements of Performance Specifications 8 or 9 of appendix B of part 60 to monitor TOC every 15 minutes.

<sup>b</sup>Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

TABLE 5 TO SUBPART GGG. CONTROL REQUIREMENTS FOR ITEMS OF EQUIPMENT THAT MEET THE CRITERIA OF § 63.1252(f)

Item of equipment	Control requirement <sup>a</sup>
Drain or drain hub	(a) Tightly fitting solid cover (TFSC); or (b) TFSC with a vent to either a process, or to a fuel gas system, or to a control device meeting the requirements of § 63.1256(h)(2); or (c) Water seal with submerged discharge or barrier to protect discharge from wind.
Manhole <sup>b</sup>	(a) TFSC; or (b) TSFC with a vent to either a process, or to a fuel gas system, or to a control device meeting the requirements of § 63.1256(h)(2); or (c) If the item is vented to the atmosphere, use a TFSC with a properly operating water seal at the entrance or exit to the item to restrict ventilation in the collection system. The vent pipe shall be at least 90 cm in length and not exceeding 10.2 cm in nominal inside diameter.
Lift station	(a) TFSC; or (b) TFSC with a vent to either a process, or to a fuel gas system, or to a control device meeting the requirements of § 63.1256(h)(2); or (c) If the lift station is vented to the atmosphere, use a TFSC with a properly operating water seal at the entrance or exit to the item to restrict ventilation in the collection system. The vent pipe shall be at least 90 cm in length and not exceeding 10.2 cm in nominal inside diameter. The lift station shall be level controlled to minimize changes in the liquid level.
Trench	(a) TFSC; or (b) TFSC with a vent to either a process, or to a fuel gas system, or to a control device meeting the requirements of § 63.1256(h)(2); or (c) If the item is vented to the atmosphere, use a TFSC with a properly operating water seal at the entrance or exit to the item to restrict ventilation in the collection system. The vent pipe shall be at least 90 cm in length and not exceeding 10.2 cm in nominal inside diameter.
Pipe	Each pipe shall have no visible gaps in joints, seals, or other emission interfaces.
Oil/Water separator	(a) Equip with a fixed roof and route vapors to a process or to a fuel gas system, or equip with a closed-vent system that routes vapors to a control device meeting the requirements of § 63.1256(h)(2); or (b) Equip with a floating roof that meets the equipment specifications of § 60.693 (a)(1)(i), (a)(1)(ii), (a)(2), (a)(3), and (a)(4).

TABLE 5. (continued)

Item of equipment	Control requirement <sup>a</sup>
Tank	Maintain a fixed roof. <sup>c</sup> If the tank is sparged <sup>d</sup> or used for heating or treating by means of an exothermic reaction, a fixed roof and a system shall be maintained that routes the organic hazardous air pollutants vapors to other process equipment or a fuel gas system, or a closed-vent system that routes vapors to a control device that meets the requirements of 40 CFR § 63.119(e)(1) or (e)(2).

<sup>a</sup>Where a tightly fitting solid cover is required, it shall be maintained with no visible gaps or openings, except during periods of sampling, inspection, or maintenance.

<sup>b</sup>Manhole includes sumps and other points of access to a conveyance system.

<sup>c</sup>A fixed roof may have openings necessary for proper venting of the tank, such as pressure/vacuum vent, j-pipe vent.

<sup>d</sup>The liquid in the tank is agitated by injecting compressed air or gas.

TABLE 6 TO SUBPART GGG. WASTEWATER -- COMPLIANCE OPTIONS  
FOR WASTEWATER TANKS

Capacity, m <sup>3</sup>	Maximum true vapor pressure, kPa	Control requirements
<75		§ 63.1256(b)(1)
≥75 and <151	<13.1	§ 63.1256(b)(1)
	≥13.1	§ 63.1256(b)(2)
≥151	<5.2	§ 63.1256(b)(1)
	≥5.2	§ 63.1256(b)(2)

TABLE 7 TO SUBPART GGG. WASTEWATER--INSPECTION AND  
MONITORING REQUIREMENTS FOR WASTE MANAGEMENT UNITS

To comply with	Inspection or monitoring requirement	Frequency of inspection or monitoring	Method
TANKS:			
63.1256(b)(3)(i)	Inspect fixed roof and all openings for leaks	Initially Semiannually	Visual
63.1256(b)(4)	Inspect floating roof in accordance with §§ 63.120(a)(2) and (a)(3)	See § 63.120(a)(2) and (a)(3)	Visual
63.1256(b)(5)	Measure floating roof seal gaps in accordance with §§ 63.120(b)(2)(i) through (b)(4)	See § 63.120(b)(2)(i) through (b)(4)	
	- Primary seal gaps	Initially Once every 5 years (annually if no secondary seal)	
	- Secondary seal gaps	Initially Semiannually	
63.1256(b)(7) 63.1256(b)(8)	Inspect wastewater tank for control equipment failures and improper work practices	Initially Semiannually	Visual
SURFACE IMPOUNDMENTS:			
63.1256(c)(1)(i)	Inspect cover and all openings for leaks	Initially Semiannually	Visual
63.1256(c)(2)	Inspect surface impoundment for control equipment failures and improper work practices	Initially Semiannually	Visual



TABLE 7. (continued)

To comply with	Inspection or monitoring requirement	Frequency of inspection or monitoring	Method
CONTAINERS:			
63.1256(d)(1)(i) 63.1256(d)(1)(ii)	Inspect cover and all openings for leaks	Initially Semiannually	Visual
63.1256(d)(3)(i)	Inspect enclosure and all openings for leaks	Initially Semiannually	Visual
63.1256(d)(4)	Inspect container for control equipment failures and improper work practices	Initially Semiannually	Visual
INDIVIDUAL DRAIN SYSTEMS <sup>a</sup> :			
63.1256(e)(1)(i)	Inspect cover and all openings to ensure there are no gaps, cracks, or holes	Initially Semiannually	Visual
63.1256(e)(2)	Inspect individual drain system for control equipment failures and improper work practices	Initially Semiannually	Visual
63.1256(e)(4)(i)	Verify that sufficient water is present to properly maintain integrity of water seals	Initially Semiannually	Visual
63.1256(e)(4)(ii) 63.1256(e)(5)(i)	Inspect all drains using tightly-fitted caps or plugs to ensure caps and plugs are in place and properly installed	Initially Semiannually	Visual
63.1256(e)(5)(ii)	Inspect all junction boxes to ensure covers are in place and have no visible gaps, cracks, or holes	Initially Semiannually	Visual or smoke test or other means as specified
63.1256(e)(5)(iii) )	Inspect unburied portion of all sewer lines for cracks and gaps	Initially Semiannually	Visual

TABLE 7. (continued)

To comply with	Inspection or monitoring requirement	Frequency of inspection or monitoring	Method
OIL-WATER SEPARATORS:			
63.1256(f)(2)(i)	Inspect fixed roof and all openings for leaks	Initially Semiannually	Visual
63.1256(f)(3)	Measure floating roof seal gaps in accordance with 40 CFR 60.696(d)(1)	Initially <sup>b</sup>	See 40 CFR 60.696(d)(1)
	- Primary seal gaps	Once every 5 years	
63.1256(f)(3)	- Secondary seal gaps	Initially <sup>b</sup> Annually	
63.1256(f)(4)	Inspect oil-water separator for control equipment failures and improper work practices	Initially Semiannually	Visual

<sup>a</sup>As specified in § 63.1256(e), the owner or operator shall comply with either the requirements of § 63.1256(e)(1) and (2) or § 63.1256(e)(4) and (5).

<sup>b</sup>Within 60 days of installation as specified in § 63.1256(f)(3).

TABLE 8 TO SUBPART GGG. FRACTION MEASURED ( $F_m$ )  
FOR HAP COMPOUNDS IN WASTEWATER STREAMS

Chemical name	CAS No. <sup>a</sup>	$F_m$
Acetaldehyde	75070	1.00
Acetonitrile	75058	0.99
Acetophenone	98862	0.31
Acrolein	107028	1.00
Acrylonitrile	107131	1.00
Allyl chloride	107051	1.00
Benzene	71432	1.00
Benzyl chloride	100447	1.00
Biphenyl	92524	0.86
Bromoform	75252	1.00
Butadiene (1,3-)	106990	1.00
Carbon disulfide	75150	1.00
Carbon tetrachloride	56235	1.00
Chlorobenzene	108907	0.96
Chloroform	67663	1.00
Chloroprene (2-Chloro-1,3-butadiene)	126998	1.00
Cumene	98828	1.00
Dichlorobenzene (p-1,4-)	106467	1.00
Dichloroethane (1,2-) (Ethylene dichloride)	107062	1.00
Dichloroethyl ether (Bis(2-Chloroethyl ether))	111444	0.76
Dichloropropene (1,3-)	542756	1.00
Diethyl sulfate	64675	0.0025
Dimethyl sulfate	77781	0.086
Dimethylaniline (N,N-)	121697	0.00080
Dimethylhydrazine (1,1-)	57147	0.38
Dinitrophenol (2,4-)	51285	0.0077
Dinitrotoluene (2,4-)	121142	0.085
Dioxane (1,4-) (1,4-Diethyleneoxide)	123911	0.87
Epichlorohydrin(1-Chloro-2,3-epoxypropane)	106898	0.94
Ethyl acrylate	140885	1.00
Ethylbenzene	100414	1.00
Ethyl chloride (Chloroethane)	75003	1.00
Ethylene dibromide (Dibromomethane)	106934	1.00

TABLE 8. (continued)

Chemical name	CAS No. <sup>a</sup>	F <sub>m</sub>
Ethylene glycol dimethyl ether	110714	0.86
Ethylene glycol monobutyl ether acetate	112072	0.043
Ethylene glycol monomethyl ether acetate	110496	0.093
Ethylene oxide	75218	1.00
Ethylidene dichloride (1,1-Dichloroethane)	75343	1.00
Hexachlorobenzene	118741	0.97
Hexachlorobutadiene	87683	0.88
Hexachloroethane	67721	0.50
Hexane	110543	1.00
Isophorone	78591	0.47
Methanol	67561	0.85
Methyl bromide (Bromomethane)	74839	1.00
Methyl chloride (Chloromethane)	74873	1.00
Methyl ethyl ketone (2-Butanone)	78933	0.99
Methyl isobutyl ketone (Hexone)	108101	0.98
Methyl methacrylate	80626	1.00
Methyl tert-butyl ether	1634044	1.00
Methylene chloride (Dichloromethane)	75092	1.00
Naphthalene	91203	0.99
Nitrobenzene	98953	0.39
Nitropropane (2-)	79469	0.99
Phosgene	75445	1.00
Propionaldehyde	123386	1.00
Propylene dichloride (1,2-Dichloropropane)	78875	1.00
Propylene oxide	75569	1.00
Styrene	100425	1.00
Tetrachloroethane (1,1,2,2-)	79345	1.00
Tetrachloroethylene (Perchloroethylene)	127184	1.00
Toluene	108883	1.00
Toluidine (o-)	95534	0.15
Trichlorobenzene (1,2,4-)	120821	1.00
Trichloroethane (1,1,1-) (Methyl chloroform)	71556	1.00
Trichloroethane (1,1,2-) (Vinyl Trichloride)	79005	0.98

TABLE 8. (continued)

Chemical name	CAS No. <sup>a</sup>	F <sub>m</sub>
Trichloroethylene	79016	1.00
Trichlorophenol (2,4,5-)	95954	1.00
Triethylamine	121448	1.00
Trimethylpentane (2,2,4-)	540841	1.00
Vinyl acetate	108054	1.00
Vinyl chloride (Chloroethylene)	75014	1.00
Vinylidene chloride (1,1-Dichloroethylene)	75354	1.00
Xylene (m-)	108383	1.00
Xylene (o-)	95476	1.00
Xylene (p-)	106423	1.00

<sup>a</sup>CAS numbers refer to the Chemical Abstracts Service registry number assigned to specific compounds, isomers, or mixtures of compounds.

TABLE 9 TO SUBPART GGG. DEFAULT BIORATES FOR LIST 1  
COMPOUNDS

Compound name	Biorate (K1), L/g MLVSS-hr
Acetonitrile	0.100
Acetophenone	0.538
Diethyl sulfate	0.105
Dimethyl hydrazine(1,1)	0.227
Dimethyl sulfate	0.178
Dinitrotoluene(2,4)	0.784
Dioxane(1,4)	0.393
Ethylene glycol dimethyl ether	0.364
Ethylene glycol monomethyl ether acetate	0.159
Ethylene glycol monobutyl ether acetate	0.496
Isophorone	0.598
Methanol	a
Nitrobenzene	2.300
Toluidine (-0)	0.859

<sup>a</sup>For direct dischargers, the default biorate for methanol is 3.5 L/g MLVSS-hr; for indirect dischargers, the default biorate for methanol is 0.2 L/g MLVSS-hr.

## APPENDIX A TO SUBPART GGG--EQUIPMENT LEAKS

## § GGGA-1 General Equipment Leak Requirements.

(a) The provisions of this appendix apply to pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, control devices, and closed-vent systems required by this subpart that are intended to operate in organic hazardous air pollutant service 300 hours or more during the calendar year within a source subject to the provisions of this subpart.

(b) Consistency with other regulations. After the compliance date for a process, equipment subject to both this subpart and either of the following will be required to comply only with the provisions of this subpart:

(1) 40 CFR part 60.

(2) 40 CFR part 61.

(c) [Reserved]

(d) The provisions in § 63.1(a)(3) of subpart A of this part do not alter the provisions in paragraph (b) of this section.

(e) Lines and equipment not containing process fluids are not subject to the provisions of this appendix. Utilities, and other nonprocess lines, such as heating and cooling systems which do not combine their materials with

those in the processes they serve, are not considered to be part of a process.

(f) The provisions of this appendix do not apply to bench-scale processes, regardless of whether the processes are located at the same plant site as a process subject to the provisions of this subpart.

(g) Each piece of equipment to which this appendix applies shall be identified such that it can be distinguished readily from equipment that is not subject to this appendix. Identification of the equipment does not require physical tagging of the equipment. For example, the equipment may be identified on a plant site plan, in log entries, or by designation of process boundaries by some form of weatherproof identification. If changes are made to the affected source subject to the leak detection requirements, equipment identification for each type of component shall be updated, if needed, within 15 calendar days of the end of each monitoring period for that component.

(h) Equipment that is in vacuum service is excluded from the requirements of this appendix.

(i) Equipment that is in organic HAP service, but is in such service less than 300 hours per calendar year, is excluded from the requirements of this appendix if it is identified as required in § GGGA-8(j) of this appendix.



(j) When each leak is detected by visual, audible, or olfactory means, or by monitoring as described in § 63.180(b) or (c), the following requirements apply:

(1) A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.

(2) The identification on a valve or connector in light liquid or gas/vapor service may be removed after it has been monitored as specified in § GGGA-6(g)(3) and § 63.174(e), and no leak has been detected during the follow-up monitoring.

(3) The identification on equipment, except on a valve or connector in light liquid or gas/vapor service, may be removed after it has been repaired.

§ GGGA-2 Definitions.

Bench-scale batch process means a batch process (other than a research and development facility) that is capable of being located on a laboratory bench top. This bench-scale equipment will typically include reagent feed vessels, a small reactor and associated product separator, recovery and holding equipment. These processes are only capable of producing small quantities of product.

Closed-loop system means an enclosed system that returns process fluid to the process and is not vented to the atmosphere except through a closed-vent system.

Closed-purge system means a system or combination of system and portable containers, to capture purged liquids. Containers must be covered or closed when not being filled or emptied.

Connector means flanged, screwed, or other joined fittings used to connect two pipe lines or a pipe line and a piece of equipment. A common connector is a flange. Joined fittings welded completely around the circumference of the interface are not considered connectors for the purpose of this regulation. For the purpose of reporting and record-keeping, connector means joined fittings that are not inaccessible, ceramic, or ceramic-lined as described in § GGGA-3(a)(7) and § GGGA-7(c).

Control device, for purposes of this appendix, means any equipment used for recovering or oxidizing organic hazardous air pollutant vapors. Such equipment includes, but is not limited to, absorbers, carbon adsorbers, condensers, flares, boilers, and process heaters.

Double block and bleed system means two block valves connected in series with a bleed valve or line that can vent the line between the two block valves.

Duct work means a conveyance system such as those commonly used for heating and ventilation systems. It is often made of sheet metal and often has sections connected by screws or crimping. Hard-piping is not ductwork.

Equipment, for purposes of this appendix, means each pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, connector, and instrumentation system in organic hazardous air pollutant service; and any control devices or closed-vent systems required by this subpart.

First attempt at repair means to take action for the purpose of stopping or reducing leakage of organic material to the atmosphere.

Flow indicator means a device which indicates whether gas flow is, or whether the valve position would allow gas flow to be present, in a line.

Group of processes means all of the equipment associated with processes in a building, processing area, or facility-wide. For a dedicated process, a group of processes may consist of a single process.

In gas/vapor service means that a piece of equipment in organic hazardous air pollutant service contains a gas or vapor at operating conditions.

In heavy liquid service means that a piece of equipment in organic hazardous air pollutant service is not in gas/vapor service or in light liquid service.

In light liquid service means that a piece of equipment in organic hazardous air pollutant service contains a liquid that meets the following conditions:

1. The vapor pressure of one or more of the organic compounds is greater than 0.3 kilopascals at 20°C;
2. The total concentration of the pure organic compounds constituents having a vapor pressure greater than 0.3 kilopascals at 20°C is equal to or greater than 20 percent by weight of the total process stream; and
3. The fluid is a liquid at operating conditions.

(Note: Vapor pressures may be determined by the methods described in 40 CFR 60.485(e)(1).)

In liquid service means that a piece of equipment in organic hazardous air pollutant service is not in gas/vapor service.

In organic hazardous air pollutant or in organic HAP service means that a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 5 percent by weight of total organic HAP's as determined according to the provisions of § 63.180(d). The provisions of § 63.180(d) also specify how to determine that a piece of equipment is not in organic HAP service.

In vacuum service means that equipment is operating at an internal pressure which is at least 5 kilopascals below ambient pressure.

In-situ sampling systems means nonextractive samplers or in-line samplers.

Initial startup means the first time a new or reconstructed source begins production. Initial startup does not include operation solely for testing equipment. Initial startup does not include subsequent start ups (as defined in this section) of processes following malfunctions or process shutdowns.

Instrumentation system means a group of equipment components used to condition and convey a sample of the process fluid to analyzers and instruments for the purpose of determining process operating conditions (e.g., composition, pressure, flow, etc.). Valves and connectors are the predominant type of equipment used in instrumentation systems; however, other types of equipment may also be included in these systems. Only valves nominally 0.5 inches and smaller, and connectors nominally 0.75 inches and smaller in diameter are considered instrumentation systems for the purposes of this subpart. Valves greater than nominally 0.5 inches and connectors greater than nominally 0.75 inches associated with instrumentation systems are not considered part of instrumentation systems and must be monitored individually.

Liquids dripping means any visible leakage from the seal including dripping, spraying, misting, clouding, and ice formation. Indications of liquid dripping include

puddling or new stains that are indicative of an existing evaporated drip.

Nonrepairable means that it is technically infeasible to repair a piece of equipment from which a leak has been detected without a process shutdown.

Open-ended valve or line means any valve, except pressure relief valves, having one side of the valve seat in contact with process fluid and one side open to atmosphere, either directly or through open piping.

Plant site means all contiguous or adjoining property that is under common control, including properties that are separated only by a road or other public right-of-way. Common control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, or any combination thereof.

Pressure release means the emission of materials resulting from the system pressure being greater than the set pressure of the pressure relief device. This release can be one release or a series of releases over a short time period due to a malfunction in the process.

Pressure relief device or valve means a safety device used to prevent operating pressures from exceeding the maximum allowable working pressure of the process equipment. A common pressure relief device is a spring-loaded pressure relief valve. Devices that are actuated either by a

pressure of less than or equal to 2.5 psig or by a vacuum are not pressure relief devices.

Process shutdown means a work practice or operational procedure that stops production from a process or part of a process during which it is technically feasible to clear process material from a process or part of a process consistent with safety constraints and during which repairs can be effected. An unscheduled work practice or operational procedure that stops production from a process or part of a process for less than 24 hours is not a process shutdown. An unscheduled work practice or operational procedure that would stop production from a process or part of a process for a shorter period of time than would be required to clear the process or part of the process of materials and start up the process, and would result in greater emissions than delay of repair of leaking components until the next scheduled process shutdown, is not a process shutdown. The use of spare equipment and technically feasible bypassing of equipment without stopping production are not process shutdowns.

Repaired means that equipment is adjusted, or otherwise altered, to eliminate a leak as defined in the applicable sections of this appendix.

Sampling connection system means an assembly of equipment within a process unit used during periods of

representative operation to take samples of the process fluid. Equipment used to take nonroutine grab samples is not considered a sampling connection system.

Sensor means a device that measures a physical quantity or the change in a physical quantity, such as temperature, pressure, flow rate, pH, or liquid level.

Set pressure means the pressure at which a properly operating pressure relief device begins to open to relieve atypical process system operating pressure.

Startup means the setting in operation of a piece of equipment or a control device that is subject to this subpart.

#### § GGGA-3 References.

(a) The owner or operator of a source subject to this appendix shall comply with the following sections of subpart H, except that references to § 63.160 and § 63.162 shall mean § GGGA-1 of this appendix; references to § 63.161 shall mean § GGGA-2 of this appendix; references to § 63.163 and § 63.173 shall mean § GGGA-4 of this appendix; references to § 63.167 shall mean § GGGA-5 of this appendix; references to § 63.168 shall mean § GGGA-6 of this appendix; references to § 63.170 shall be included in the requirements set forth in § 63.1254; references to § 63.171 shall mean § GGGA-3(a)(5) of this appendix; references to § 63.172 shall mean § GGGA-3(a)(6) of this appendix; references to



§ 63.181 shall mean § GGGA-8 of this appendix; and references to § 63.182 shall mean § GGGA-9 of this appendix. The term "process unit" as used in subpart H shall be considered to be defined the same as "group of processes" for sources subject to this subpart GGG:

- (1) Section 63.164, Compressors;
- (2) Section 63.165, Pressure relief devices in gas/vapor service;
- (3) Section 63.166, Sampling connection systems;
- (4) Section 63.169, Pumps, valves, connectors, and agitators in heavy liquid service; instrumentation systems; and pressure relief devices in liquid service;
- (5) Section 63.171, Delay of repair, except  
§ 63.171(a) shall be changed to read: Delay of repair of equipment for which leaks have been detected is allowed if one of the following conditions exist:
  - (i) Section 63.171(a)(1) is added to read: The repair is technically infeasible without a process shutdown. Repair of this equipment shall occur by the end of the next scheduled process shutdown.
  - (ii) Section 63.171(a)(2) is added to read: The owner or operator determines that repair personnel would be exposed to an immediate danger if attempting to repair without a process shutdown. Repair of this equipment shall occur by the end of the next scheduled process shutdown.

(6) Section 63.172, Closed-vent systems and control devices, for closed-vent systems used to comply with this subpart, and for control devices used to comply with this appendix only, except

(i) Sections 63.172(k) and (l) shall not apply.

Instead, references to these paragraphs shall mean § GGGA-7.

(ii) Owners or operators may, instead of complying with the provisions of § 63.172(f), design a closed-vent system to operate at a pressure below atmospheric pressure. The system shall be equipped with at least one pressure gage or other pressure measurement device that can be read from a readily accessible location to verify that negative pressure is being maintained in the closed-vent system when the associated control device is operating.

(7) Section 63.174, Connectors, except:

(i) Sections 63.174(f) and (g) shall not apply.

Instead, references to these paragraphs shall mean § GGGA-7.

(ii) Days that the connectors are not in organic HAP service shall not be considered part of the 3 month period in § 63.174(e).

(iii) Section 63.174(b)(3)(ii) shall be changed to read: Once every 4 years, if the percent leaking connectors in the process unit was less than 0.5 percent, but equal to or greater than 0.25 percent, during the last required monitoring period. An owner or operator may comply with the

requirements of this paragraph by monitoring at least 40 percent of the connectors in the first 2 years and the remainder of the connectors within the next 2 years.

(iv) Section 63.174(b)(3)(iv) shall be revised to read: The owner or operator shall increase the monitoring frequency to once every 2 years for the next monitoring period if leaking connectors comprise at least 0.5 percent but less than 1.0 percent of the connectors monitored within the 4 years specified in paragraph (b)(3)(ii) of this section or the first 4 years specified in paragraph (b)(3)(iii) of this section. At the end of that 2 year monitoring period, the owner or operator shall monitor once per year while the percent leaking connectors is greater than or equal to 0.5 percent; if the percent leaking connectors is less than 0.5 percent, the owner or operator may return to monitoring once every 4 years or may monitor in accordance with paragraph (b)(3)(iii) of this section, if appropriate.

(v) Section 63.174(b)(3)(v) shall be revised to read: If an owner or operator complying with the requirements of paragraph (b)(3)(ii) or (iii) of this section for a group of processes determines that 1 percent or greater of the connectors are leaking, the owner or operator shall increase the monitoring frequency to one time per year. The owner or operator may again elect to use the provisions of

paragraph (b)(3)(ii) or (iii) of this section after a monitoring period in which less than 0.5 percent of the connectors are determined to be leaking.

(vi) Section 63.174(b)(3)(iii) shall be changed to read: Once every 8 years, if the percent leaking connectors in the process unit was less than 0.25 percent during the last required monitoring period. An owner or operator shall monitor at least 50 percent of the connectors in the first 4 years and the remainder of the connectors within the next 4 years. If the percent leaking connectors in the first 4 years is equal to or greater than 0.35 percent, the monitoring program shall revert at that time to the appropriate monitoring frequency specified in paragraph (b)(3)(ii), (b)(3)(iv), or (b)(3)(v) of this section.

(8) Section 63.177, Alternative means of emission limitation: General;

(9) Section 63.178, Alternative means of emission limitation: Batch processes, except that § 63.178(b), requirements for pressure testing, shall apply to all processes, not just batch processes;

(10) Section 63.179, Alternative means of emission limitation: Enclosed-vented process units;

(11) Section 63.180, Test methods and procedures, except § 63.180(b)(4)(ii)(A) through (C) are replaced by

(b)(4)(ii) that reads: A mixture of methane and air at concentration of approximately, but less than, 10,000 parts per million methane for agitators; 2,000 parts per million for pumps; and 500 parts per million for all other equipment, except as provided in paragraph (b)(4)(iii) of this section.

GGGA-4 Standards: Pumps in Light Liquid Service and Agitators in Gas/Vapor Service and in Light Liquid Service.

(a) The provisions of this section apply to each pump that is in light organic HAP liquid service, and to each agitator in organic HAP gas/vapor service or in light organic HAP liquid service.

(b)(1) Monitoring. Each pump and agitator subject to this section shall be monitored quarterly to detect leaks by the method specified in § 63.180(b) of this subpart, except as provided in § 63.177, § GGGA-7, and paragraphs (e) through (i) of this section.

(2) Leak definition. The instrument reading, as determined by the method as specified in § 63.180(b), that defines a leak is:

(i) For agitators, an instrument reading of 10,000 parts per million or greater.

(ii) For pumps, an instrument reading of 2,000 parts per million or greater.

(3) Visual Inspections. Each pump and agitator shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump or agitator seal. If there are indications of liquids dripping from the seal, a leak is detected.

(c) Repair provisions.

(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § GGGA-3(a)(5).

(2) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected. First attempts at repair include, but are not limited to, the following practices where practicable:

(i) Tightening of packing gland nuts.

(ii) Ensuring that the seal flush is operating at design pressure and temperature.

(d) Calculation of percent leakers.

(1) The owner or operator shall decide no later than the end of the first monitoring period what groups of processes will be developed. Once the owner or operator has decided, all subsequent percent calculations shall be made on the same basis.

(2) If, calculated on a 1 year rolling average, the greater of either 10 percent or three of the pumps in a

group of processes leak, the owner or operator shall monitor each pump once per month.

(3) The number of pumps in a group of processes shall be the sum of all the pumps in organic HAP service, except that pumps found leaking in a continuous process within 1 quarter after startup of the pump shall not count in the percent leaking pumps calculation for that one monitoring period only.

(4) Percent leaking pumps shall be determined by the following equation:

$$\%P_L = [(P_L - P_S)/(P_T - P_S)] \times 100$$

where:

$\%P_L$  = percent leaking pumps

$P_L$  = number of pumps found leaking as determined through quarterly monitoring as required in paragraphs (b)(1) and (b)(2) of this section.

$P_T$  = total pumps in organic HAP service, including those meeting the criteria in paragraphs (e) and (f) of this section

$P_S$  = number of pumps in a continuous process leaking within 1 quarter of startup during the current monitoring period

(e) Exemptions. Each pump or agitator equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of

paragraphs (a) through (d)(3) of this section, provided the following requirements are met:

(1) Each dual mechanical seal system is:

(i) Operated with the barrier fluid at a pressure that is at all times greater than the pump/agitator stuffing box pressure; or

(ii) Equipped with a barrier fluid degassing reservoir that is connected by a closed-vent system to a control device that complies with the requirements of § GGGA-3(a)(6); or

(iii) Equipped with a closed-loop system that purges the barrier fluid into a process stream.

(2) The barrier fluid is not in light liquid service.

(3) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.

(4) Each pump/agitator is checked by visual inspection each calendar week for indications of liquids dripping from the pump/agitator seal.

(i) If there are indications of liquids dripping from the pump/agitator seal at the time of the weekly inspection, the pump/agitator shall be monitored as specified in § 63.180(b) to determine if there is a leak of organic HAP in the barrier fluid.



(ii) If an instrument reading of 2,000 parts per million or greater is measured for pumps, or 10,000 parts per million or greater is measured for agitators, a leak is detected.

(5) Each sensor as described in paragraph (e)(3) of this section is observed daily or is equipped with an alarm unless the pump is located within the boundary of an unmanned plant site.

(6)(i) The owner or operator determines, based on design considerations and operating experience, criteria applicable to the presence and frequency of drips and to the sensor that indicate failure of the seal system, the barrier fluid system, or both.

(ii) If indications of liquids dripping from the pump/agitator seal exceed the criteria established in paragraph (e)(6)(i) of this section, or if, based on the criteria established in paragraph (e)(6)(i) of this section, the sensor indicates failure of the seal system, the barrier fluid system, or both, a leak is detected.

(iii) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § GGGA-3(a)(5) of this appendix.

(iv) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(f) Any pump/agitator that is designed with no externally actuated shaft penetrating the pump/agitator housing is exempt from the requirements of paragraphs (a) through (d) of this section, except for the requirements of paragraph (b)(3) and, for pumps, paragraph (d)(4).

(g) Any pump/agitator equipped with a closed-vent system capable of capturing and transporting any leakage from the seal or seals back to the process or to a control device that complies with the requirements of § GGGA-3(a)(6) is exempt from the requirements of paragraphs (b) through (e) of this section.

(h) Any pump/agitator that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (b)(3) and (e)(4) of this section, and the daily requirements of paragraph (e)(5) of this section, provided that each pump/agitator is visually inspected as often as practicable and at least monthly.

(i) If more than 90 percent of the pumps in a group of processes meet the criteria in either paragraph (e) or (f) of this section, the process is exempt from the requirements of paragraph (d) of this section.

§ GGGA-5 Standards: Open-Ended Valves or Lines.

(a)(1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as

provided in § 63.177 and paragraphs (d) through (f) of this section.

(2) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line, or during maintenance or repair. The cap, blind flange, plug, or second valve shall be in place within 1 hour of cessation of operations requiring process fluid flow through the open-ended valve or line, or within 1 hour of cessation of maintenance or repair.

(b) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.

(c) When a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with paragraph (a) of this section at all other times.

(d) Open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are exempt from the requirements of paragraphs (a) through (c) of this section.

(e) Open-ended valves or lines containing materials which would autocatalytically polymerize are exempt from the requirements of paragraphs (a) through (c) of this section.

(f) Open-ended valves or lines containing materials which could cause an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system as specified in paragraphs (a) through (c) of this section are exempt from the requirements of paragraphs (a) through (c) of this section.

§ GGGA-6 Standards: Valves in Gas/Vapor Service and in Light Liquid Service.

(a) The provisions of this section apply to valves that are either in gas organic HAP service or in light liquid organic HAP service.

(b) For existing and new affected sources, all valves subject to this section shall be monitored, except as provided in § 63.177 and § GGGA-7, by no later than 1 year after the compliance date.

(c) Monitoring. The owner or operator of a source subject to this appendix shall monitor all valves, except as provided in § 63.177 and § GGGA-7, at the intervals specified in paragraph (d) of this section and shall comply with all other provisions of this section, except as provided in § GGGA-3(a)(5), § 63.178, and § 63.179.

(1) The valves shall be monitored to detect leaks by the method specified in § 63.180(b).

(2) An instrument reading of 500 parts per million or greater defines a leak.

(d) Subsequent monitoring frequencies. After conducting the initial survey required in paragraph (b) of this section, the owner or operator shall monitor valves for leaks at the intervals specified below:

(1) For a group of processes with 2 percent or greater leaking valves, calculated according to paragraph (f) of this section, the owner or operator shall monitor each valve once per month, except as specified in paragraph (i) of this section.

(2) For a group of processes with less than 2 percent leaking valves, the owner or operator shall monitor each valve once each quarter, except as provided in paragraphs (d)(3) through (d)(5) of this section.

(3) For a group of processes with less than 1 percent leaking valves, the owner or operator may elect to monitor each valve once every 2 quarters.

(4) For a group of processes with less than 0.5 percent leaking valves, the owner or operator may elect to monitor each valve once every 4 quarters.

(5) For a group of processes with less than 0.25 percent leaking valves, the owner or operator may elect to monitor each valve once every 2 years.

(e) Calculation of percent leakers. For a group of processes to which this subpart applies, an owner or operator may choose to subdivide the valves in the applicable group of processes and apply the provisions of paragraph (d) of this section to each subgroup. If the owner or operator elects to subdivide the valves in the applicable group of processes, then the provisions of paragraphs (e)(1) through (e)(8) of this section apply.

(1) The overall performance of total valves in the applicable group of processes is less than 2 percent leaking valves, as detected according to paragraphs (c)(1) and (2) of this section and as calculated according to paragraphs (f)(2) and (3) of this section.

(2) The initial assignment or subsequent reassignment of valves to subgroups shall be governed by the provisions of paragraphs (e)(2)(i) through (iii) of this section.

(i) The owner or operator shall determine which valves are assigned to each subgroup. Valves with less than 1 year of monitoring data or valves not monitored within the last 12 months must be placed initially into the most frequently monitored subgroup until at least 1 year of monitoring data has been obtained.

(ii) Any valve or group of valves can be reassigned from a less frequently monitored subgroup to a more frequently monitored subgroup provided that the valves to be reassigned were monitored during the most recent monitoring period for the less frequently monitored subgroup. The monitoring results must be included with the less frequently monitored subgroup's monitoring event and associated next percent leaking valves calculation for that group.

(iii) Any valve or group of valves can be reassigned from a more frequently monitored subgroup to a less frequently monitored subgroup provided that the valves to be reassigned have not leaked for the period of the less frequently monitored subgroup (e.g., for the last 12 months, if the valve or group of valves is to be reassigned to a subgroup being monitored annually). Nonrepairable valves may not be reassigned to a less frequently monitored subgroup.

(3) The owner or operator shall determine every 6 months if the overall performance of total valves in the applicable group of processes is less than 2 percent leaking valves and so indicate the performance in the next periodic report. If the overall performance of total valves in the applicable group of processes is 2 percent leaking valves or greater, the owner or operator shall revert to the program required in paragraphs (b) through (d) of this section. The

overall performance of total valves in the applicable group of processes shall be calculated as a weighted average of the percent leaking valves of each subgroup according to the following equation:

$$\%V_{LO} = \frac{\sum_{i=1}^n (\%V_{Li} \times V_i)}{\sum_{i=1}^n V_i}$$

where:

$\%V_{LO}$  = overall performance of total valves in the applicable process or group of processes

$\%V_{Li}$  = percent leaking valves in subgroup i, most recent value calculated according to the procedures in paragraphs (f)(2) and (3) of this section

$V_i$  = number of valves in subgroup i

n = number of subgroups

(4) Records. In addition to records required by § GGGA-8, the owner or operator shall maintain records specified in paragraphs (e)(4)(i) through (iv) of this section.

(i) Which valves are assigned to each subgroup,

(ii) Monitoring results and calculations made for each subgroup for each monitoring period,

(iii) Which valves are reassigned and when they were reassigned, and



(iv) The results of the semiannual overall performance calculation required in paragraph (e)(3) of this section.

(5) The owner or operator shall notify the Administrator no later than 30 days prior to the beginning of the next monitoring period of the decision to subgroup valves. The notification shall identify the participating processes and the valves assigned to each subgroup.

(6) Semiannual reports. In addition to the information required by § GGGA-9(c), the owner or operator shall submit in the periodic reports the information specified in paragraphs (e)(6)(i) and (ii).

(i) Valve reassignments occurring during the reporting period, and

(ii) Results of the semiannual overall performance calculation required by paragraph (e)(3) of this section.

(7) To determine the monitoring frequency for each subgroup, the calculation procedures of paragraph (f)(3) of this section shall be used.

(8) Except for the overall performance calculations required by paragraphs (e)(1) and (e)(3) of this section, each subgroup shall be treated as if it were a process for the purposes of applying the provisions of this section.

(f)(1) The owner or operator shall decide no later than the implementation date of this subpart or upon revision of an operating permit how to group the processes.

Once the owner or operator has decided, all subsequent percentage calculations shall be made on the same basis.

(2) Percent leaking valves for each group of processes or subgroup shall be determined by the following equation:

$$\%V_L = [V_L/V_T] \times 100$$

where:

$\%V_L$  = percent leaking valves

$V_L$  = number of valves found leaking excluding  
nonrepairables as provided in paragraph (f)(4)(i)  
of this section

$V_T$  = total valves monitored, in a monitoring period  
excluding valves monitored as required by (g)(3)  
of this section

(3) When determining monitoring frequency for each group of processes or subgroup subject to monthly, quarterly, or semiannual monitoring frequencies, the percent leaking valves shall be the arithmetic average of the percent leaking valves from the last two monitoring periods. When determining monitoring frequency for each group of processes or subgroup subject to annual or biennial (once every 2 years) monitoring frequencies, the percent leaking valves shall be the arithmetic average of the percent leaking valves from the last three monitoring periods.

(4)(i) Nonrepairable valves shall be included in the calculation of percent leaking valves the first time the

valve is identified as leaking and nonrepairable and as required to comply with paragraph (f)(4)(ii) of this section. Otherwise, a number of nonrepairable valves (identified and included in the percent leaking calculation in a previous period) up to a maximum of 1 percent of the total number of valves in organic HAP service at a process may be excluded from calculation of percent leaking valves for subsequent monitoring periods.

(ii) If the number of nonrepairable valves exceeds 1 percent of the total number of valves in organic HAP service at a process, the number of nonrepairable valves exceeding 1 percent of the total number of valves in organic HAP service shall be included in the calculation of percent leaking valves.

(g) Repair provisions.

(1) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in § GGGA-3(a)(5) of this appendix.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(3) When a leak is repaired, the valve shall be monitored at least once within the first 3 months after its repair. Days that the valve are not in organic HAP service shall not be considered part of this 3 month period.

(h) First attempts at repair include, but are not limited to, the following practices where practicable:

- (1) Tightening of bonnet bolts,
- (2) Replacement of bonnet bolts,
- (3) Tightening of packing gland nuts, and
- (4) Injection of lubricant into lubricated packing.

(i) Any equipment located at a plant site with fewer than 250 valves in organic HAP service in the affected source is exempt from the requirements for monthly monitoring specified in paragraph (d)(1) of this section. Instead, the owner or operator shall monitor each valve in organic HAP service for leaks once each quarter, or comply with paragraphs (d)(3) or (d)(4) of this section.

§ GGGA-7 Unsafe to Monitor, Difficult to Monitor, and Inaccessible Equipment.

(a) Equipment that is designated as unsafe to monitor, difficult to monitor, or inaccessible is exempt from the monitoring requirements specified in paragraphs (a)(1) through (4) of this section provided the owner or operator meets the requirements specified in paragraph (b), (c) or (d) of this section, as applicable. Ceramic or ceramic-lined connectors are subject to the same requirements as inaccessible connectors.

(1) For pumps and agitators, §§ GGGA-4(b), (c), and (d) do not apply.

(2) For valves, § GGGA-6(b) through (g) do not apply.

(3) For closed-vent systems, § 63.172(f)(1) and (2), and (g) do not apply.

(4) For connectors, § 63.174(b) through (e) do not apply.

(b) Equipment that is unsafe to monitor.

(1) Equipment may be designated as unsafe to monitor if the owner or operator determines that monitoring personnel would be exposed to an immediate danger as a consequence of complying with the monitoring requirements in paragraphs (a)(1) through (4) of this section.

(2) The owner or operator of equipment that is designated as unsafe-to-monitor must have a written plan that requires monitoring of the equipment as frequently as practicable during safe-to-monitor times, but not more frequently than the periodic monitoring schedule otherwise applicable.

(c) Equipment that is difficult to monitor.

(1) Equipment may be designated as difficult to monitor if the owner or operator determines that the equipment cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface or it is not accessible at anytime in a safe manner;

(2) At an existing source, any equipment within a group of processes that meets the criteria of

paragraph (c)(1) of this section may be designated as difficult to monitor. At a new affected source, an owner or operator may designate no more than 3 percent of each type of equipment as difficult to monitor.

(3) The owner or operator of equipment designated as difficult to monitor must follow a written plan that requires monitoring of the equipment at least once per calendar year.

(d) Inaccessible equipment and ceramic or ceramic-lined connectors.

(1) A connector, agitator, or valve may be designated as inaccessible if it is:

(i) Buried;

(ii) Insulated in a manner that prevents access to the equipment by a monitor probe;

(iii) Obstructed by equipment or piping that prevents access to the equipment by a monitor probe;

(iv) Unable to be reached from a wheeled scissor-lift or hydraulic-type scaffold which would allow access to equipment up to 7.6 meters (25 feet) above the ground; or

(v) Not able to be accessed at any time in a safe manner to perform monitoring. Unsafe access includes, but is not limited to, the use of a wheeled scissor-lift on unstable or uneven terrain, the use of a motorized man-lift basket in areas where an ignition potential exists, or

access would require near proximity to hazards such as electrical lines, or would risk damage to equipment.

(2) At an existing source, any connector, agitator, or valve that meets the criteria of paragraph (d)(1) of this section may be designated as inaccessible. At a new affected source, an owner or operator may designate no more than 3 percent of each type of equipment as inaccessible.

(3) If any inaccessible equipment or ceramic or ceramic-lined connector is observed by visual, audible, olfactory, or other means to be leaking, the leak shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in § GGGA-8 of this appendix.

#### § GGGA-8 Recordkeeping Requirements.

(a) An owner or operator of more than one group of processes subject to the provisions of this appendix may comply with the recordkeeping requirements for the groups of processes in one recordkeeping system if the system identifies with each record the program being implemented (e.g., quarterly monitoring) for each type of equipment. All records and information required by this section shall be maintained in a manner that can be readily accessed at the plant site. This could include physically locating the records at the plant site or accessing the records from a central location by computer at the plant site.

(b) General recordkeeping. Except as provided in paragraph (e) of this section and in paragraph GGGA-1(i), the following information pertaining to all equipment subject to the requirements in this appendix shall be recorded:

(1)(i) A list of identification numbers for equipment (except connectors that are not subject to § GGGA-7 and instrumentation systems) subject to the requirements of this appendix. Connectors, except those subject to § GGGA-7, need not be individually identified if all connectors in a designated area or length of pipe subject to the provisions of this appendix are identified as a group, and the number of subject connectors is indicated. The list for each type of equipment shall be completed no later than the completion of the initial survey required for that component. The list of identification numbers shall be updated, if needed, to incorporate equipment changes within 15 calendar days of the completion of each monitoring survey for the type of equipment component monitored.

(ii) A schedule for monitoring connectors subject to the provisions of § 63.174(a) and valves subject to the provisions of § GGGA-6(d) of this appendix.

(iii) Physical tagging of the equipment to indicate that it is in organic HAP service is not required. Equipment subject to the provisions of this appendix may be



identified on a plant site plan, in log entries, or by other appropriate methods.

(2)(i) A list of identification numbers for equipment that the owner or operator elects to equip with a closed-vent system and control device, under the provisions of § GGGA-4(g), § 63.164(h), or § 63.165(c).

(ii) A list of identification numbers for compressors that the owner or operator elects to designate as operating with an instrument reading of less than 500 parts per million above background, under the provisions of § 63.164(i).

(3)(i) A list of identification numbers for pressure relief devices subject to the provisions in § 63.165(a).

(ii) A list of identification numbers for pressure relief devices equipped with rupture disks, under the provisions of § 63.165(d).

(4) Identification of instrumentation systems subject to the provisions of this appendix. Individual components in an instrumentation system need not be identified.

(5) The owner or operator may develop a written procedure that identifies the conditions that justify a delay of repair. The written procedures may be included as part of the startup/shutdown/malfunction plan, required by § 63.1260(i), for the source or may be part of a separate document that is maintained at the plant site. Reasons for

delay of repair may be documented by citing the relevant sections of the written procedure.

(6) The following information shall be recorded for each dual mechanical seal system:

(i) Design criteria required in §§ GGGA-4(e)(6)(i) and 63.164(e)(2), and an explanation of the design criteria; and

(ii) Any changes to these criteria and the reasons for the changes.

(7) A list of equipment designated as unsafe to monitor, difficult to monitor, or inaccessible under § GGGA-7 or § GGGA-3(a)(5)(ii) and a copy of the plan for monitoring or inspecting this equipment.

(8) A list of connectors removed from and added to the process, as described in § 63.174(i)(1), and documentation of the integrity of the weld for any removed connectors, as required in § 63.174(j). This is not required unless the net credits for removed connectors is expected to be used.

(9) For batch processes that the owner or operator elects to monitor as provided under § 63.178(c), a list of equipment added to batch product processes since the last monitoring period required in §§ 63.178(c)(3)(ii) and (3)(iii). This list must be completed for each type of equipment within 15 calendar days of the completion of the each monitoring survey for the type of equipment monitored.

(c) Records of visual inspections. For visual inspections of equipment subject to the provisions of this appendix [e.g., §§ GGGA-4(b)(3), GGGA-4(e)(4)(i)], the owner or operator shall document that the inspection was conducted and the date of the inspection. The owner or operator shall maintain records as specified in paragraph (d) of this section for leaking equipment identified in this inspection, except as provided in paragraph (e) of this section. These records shall be retained for 2 years.

(d) Monitoring records. When each leak is detected as specified in §§ GGGA-4 and 63.164; §§ GGGA-6 and 63.169; and §§ 63.172 and 63.174 of this subpart, the following information shall be recorded and kept for 2 years onsite and 3 years offsite (5-years total):

(1) The instrument and the equipment identification number and the operator name, initials, or identification number.

(2) The date the leak was detected and the date of first attempt to repair the leak.

(3) The date of successful repair of the leak.

(4) If postrepair monitoring is required, maximum instrument reading measured by Method 21 of 40 CFR part 60, appendix A after it is successfully repaired or determined to be nonrepairable.

(5) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(i) The owner or operator may develop a written procedure that identifies the conditions that justify a delay of repair. In such cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure.

(ii) If delay of repair was caused by depletion of stocked parts, there must be documentation that the spare parts were sufficiently stocked onsite before depletion and the reason for depletion.

(6) If repairs were delayed, dates of process shutdowns that occur while the equipment is unrepaired.

(7)(i) If the alternative in § 63.174(c)(1)(ii) is not in use for the monitoring period, identification, either by list, location (area or grouping), or tagging of connectors disturbed since the last monitoring period required in § 63.174(b), as described in § 63.174(c)(1).

(ii) The date and results of follow-up monitoring as required in § 63.174(c). If identification of disturbed connectors is made by location, then all connectors within the designated location shall be monitored.

(8) The date and results of the monitoring required in § 63.178(c)(3)(i) for equipment added to a batch process

since the last monitoring period required in §§ 63.178(c)(3)(ii) and (c)(3)(iii). If no leaking equipment is found in this monitoring, the owner or operator shall record that the inspection was performed. Records of the actual monitoring results are not required.

(9) Copies of the periodic reports as specified in § GGGA-9(c), if records are not maintained on a computerized data base capable of generating summary reports from the records.

(e) Records of pressure tests. The owner or operator who elects to pressure test a process equipment train and supply lines between storage and processing areas to demonstrate compliance with this appendix is exempt from the requirements of paragraphs (b), (c), (d), and (f) of this section. Instead, the owner or operator shall maintain records of the following information:

(1) The identification of each product, or product code, produced during the calendar year. It is not necessary to identify individual items of equipment in the process equipment train.

(2) Records demonstrating the proportion of the time during the calendar year the equipment is in use in the process that is subject to the provisions of this subpart. Examples of suitable documentation are records of time in use for individual pieces of equipment or average time in

use for the process unit. These records are not required if the owner or operator does not adjust monitoring frequency by the time in use, as provided in § 63.178(c)(3)(iii).

(3) Physical tagging of the equipment to identify that it is in organic HAP service and subject to the provisions of this appendix is not required. Equipment in a process subject to the provisions of this appendix may be identified on a plant site plan, in log entries, or by other appropriate methods.

(4) The dates of each pressure test required in § 63.178(b), the test pressure, and the pressure drop observed during the test.

(5) Records of any visible, audible, or olfactory evidence of fluid loss.

(6) When a process equipment train does not pass two consecutive pressure tests, the following information shall be recorded in a log and kept for 2 years:

(i) The date of each pressure test and the date of each leak repair attempt.

(ii) Repair methods applied in each attempt to repair the leak.

(iii) The reason for the delay of repair.

(iv) The expected date for delivery of the replacement equipment and the actual date of delivery of the replacement equipment.

(v) The date of successful repair.

(f) Records of compressor compliance tests. The dates and results of each compliance test required for compressors subject to the provisions in § 63.164(i) and the dates and results of the monitoring following a pressure release for each pressure relief device subject to the provisions in §§ 63.165(a) and (b). The results shall include:

(1) The background level measured during each compliance test.

(2) The maximum instrument reading measured at each piece of equipment during each compliance test.

(g) Records for closed-vent systems. The owner or operator shall maintain records of the information specified in paragraphs (g)(1) through (g)(3) of this section for closed-vent systems and control devices subject to the provisions of § GGGA-3(a)(6). The records specified in paragraph (g)(1) of this section shall be retained for the life of the equipment. The records specified in paragraphs (g)(2) and (g)(3) of this section shall be retained for 2 years.

(1) The design specifications and performance demonstrations specified in paragraphs (g)(1)(i) through (g)(1)(iv) of this section.

(i) Detailed schematics, design specifications of the control device, and piping and instrumentation diagrams.

(ii) The dates and descriptions of any changes in the design specifications.

(iii) The flare design (i.e., steam assisted, air assisted, or nonassisted) and the results of the compliance demonstration required by § 63.11(b).

(iv) A description of the parameter or parameters monitored, as required in § GGGA-3(a)(6)(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring.

(2) Records of operation of closed-vent systems and control devices.

(i) Dates and durations when the closed-vent systems and control devices required in § GGGA-4 and §§ 63.164 through 63.166 are not operated as designed as indicated by the monitored parameters, including periods when a flare pilot light system does not have a flame.

(ii) Dates and durations during which the monitoring system or monitoring device is inoperative.

(iii) Dates and durations of startups and shutdowns of control devices required in § GGGA-4 and §§ 63.164 through 63.166.

(3) Records of inspections of closed-vent systems subject to the provisions of § 63.172.



(i) For each inspection conducted in accordance with the provisions of § 63.172(f)(1) or (f)(2) during which no leaks were detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(ii) For each inspection conducted in accordance with the provisions of § 63.172(f)(1) or (f)(2) during which leaks were detected, the information specified in paragraph (d) of this section shall be recorded.

(h) Records for components in heavy liquid service. Information, data, and analysis used to determine that a piece of equipment or process is in heavy liquid service shall be recorded. Such a determination shall include an analysis or demonstration that the process fluids do not meet the criteria of "in light liquid or gas service." Examples of information that could document this include, but are not limited to, records of chemicals purchased for the process, analyses of process stream composition, engineering calculations, or process knowledge.

(i) Records of exempt components. Identification, either by list, location (area or group) of equipment in organic HAP service less than 300 hours per year subject to the provisions of this appendix.

(j) Records of alternative means of compliance determination. Owners and operators choosing to comply with

the requirements of § 63.179 shall maintain the following records:

(1) Identification of the process(es) and the organic HAP they handle.

(2) A schematic of the process, enclosure, and closed-vent system.

(3) A description of the system used to create a negative pressure in the enclosure to ensure that all emissions are routed to the control device.

§ GGGA-9 Reporting Requirements.

(a) Each owner or operator of a source subject to this appendix shall submit the reports listed in paragraphs (a)(1) through (2) of this section.

(1) A Notification of Compliance Status Report described in paragraph (b) of this section,

(2) Periodic Reports described in paragraph (c) of this section, and

(3) [Reserved]

(4) [Reserved]

(b) Notification of compliance report. Each owner or operator of a source subject to this appendix shall submit the information specified in paragraphs (b)(1) through (3) of this section in the Notification of Compliance Status Report described in § 63.1260(f).

(1) The notification shall provide the information listed in paragraphs (b)(1)(i) through (iii) of this section for each process subject to the requirements of §§ GGGA-3 through GGGA-8 of this appendix.

(i) Process group identification.

(ii) Approximate number of each equipment type (e.g., valves, pumps) in organic HAP service, excluding equipment in vacuum service.

(iii) Method of compliance with the standard (for example, "monthly leak detection and repair" or "equipped with dual mechanical seals").

(2) The notification shall provide the information listed in paragraphs (b)(2)(i) and (ii) of this section for each process subject to the requirements of § GGGA-3(a)(10) and § 63.178(b).

(i) Products or product codes subject to the provisions of this appendix, and

(ii) Planned schedule for pressure testing when equipment is configured for production of products subject to the provisions of this appendix.

(3) The notification shall provide the information listed in paragraphs (b)(3)(i) and (ii) of this section for each process subject to the requirements in § 63.179.

(i) Process identification.

(ii) A description of the system used to create a negative pressure in the enclosure and the control device used to comply with the requirements of § GGGA-3(a)(6).

(4) Any change in the information submitted under this paragraph (b) shall be provided to the Administrator as a part of subsequent Periodic Reports. Section 63.9(j) shall not apply to the Notification of Compliance Status Report described in this paragraph (b) of this section.

(c) Periodic reports. The owner or operator of a source subject to this appendix shall submit Periodic Reports.

(1) A report containing the information in paragraphs (c)(2), (c)(3), and (c)(4) of this section shall be submitted semiannually starting 6 months after the Notification of Compliance Status Report, as required in paragraph (b) of this section. The first periodic report shall cover the first 6 months after the compliance date specified in § 63.1250(e). Each subsequent periodic report shall cover the 6 month period following the preceding period.

(2) For equipment complying with the provisions of §§ GGGA-3 through GGGA-8 of this appendix, the summary information listed in paragraphs (c)(2)(i) through (xii) of

this section for each monitoring period during the 6-month period.

(i) The number of valves for which leaks were detected as described in § GGGA-6(b) of this appendix, the percent leakers, and the total number of valves monitored;

(ii) The number of valves for which leaks were not repaired as required in § GGGA-6(g) of this appendix, identifying the number of those that are determined nonrepairable;

(iii) The number of pumps and agitators for which leaks were detected as described in § GGGA-4(b) of this appendix, the percent leakers, and the total number of pumps and agitators monitored;

(iv) The number of pumps and agitators for which leaks were not repaired as required in § GGGA-4(c) of this appendix;

(v) The number of compressors for which leaks were detected as described in § 63.164(f);

(vi) The number of compressors for which leaks were not repaired as required in § 63.164(g);

(vii) The number of connectors for which leaks were detected as described in § 63.174(a), the percent of connectors leaking, and the total number of connectors monitored;

(viii) The number of connectors for which leaks were not repaired as required in § 63.174(d), identifying the number of those that are determined nonrepairable;

(ix) The facts that explain any delay of repairs and, where appropriate, why a process shutdown was technically infeasible.

(x) The results of all monitoring to show compliance with §§ 63.164(i), 63.165(a), and 63.172(f) conducted within the semiannual reporting period.

(xi) If applicable, the initiation of a monthly monitoring program under either §§ GGGA-4(d)(2) or GGGA-6(d)(1)(i).

(xii) If applicable, notification of a change in connector monitoring alternatives as described in § 63.174(c)(1).

(3) For owners or operators electing to meet the requirements of § 63.178(b), the report shall include the information listed in paragraphs (i) through (v) of this paragraph for each process.

(i) Product process equipment train identification;

(ii) The number of pressure tests conducted;

(iii) The number of pressure tests where the equipment train failed either the retest or two consecutive pressure tests;

(iv) The facts that explain any delay of repairs; and

(v) The results of all monitoring to determine compliance with § 63.172(f) of this subpart.

(4) Any revisions to items reported in earlier Notification of Compliance Status Report, if the method of compliance has changed since the last report or any other changes to the information reported has occurred.